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Physick Philip Syng

Manuscript notes on his lectures.

No. 1.

Lecture 1.

Of Inflammation.

There is, perhaps, nothing more necessary to the Surgeon, than the principles of Inflamation; for as there is a certain degree of it which is necessary to restore diseased parts to their healthy state, so there is likewise other grades which are incapable of performing this restoration: Of course, therefore, a knowledge of its principles, and also of the appearances which it has in performing the restoration of diseased parts, is absolutely necessary for the Surgeon. The term inflamation was given to this process from the supposition of an accumulation of fire in the part inflamed. But this idea is altogether incorrect; the term answers very well to express our idea of that particular opperation. It may be connected with another disease or not; an instance of the former we see in scrophula and Syphilis &c. Frequently improper treatment is the result of ignorance of the symtoms which violent inflammation leaves behind it; for instance

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Chapitre I.

I knew a case of a sprained ancle, which after inflammation abated was very weak, medical assistance was called, and the Physician prescribed tonic medicines, which threw the patient into a hectic fever.

An inflamed part performs its functions with diggicultty. an instance of this we see in the eye, which when violently inflamed ~~performs its~~ loses the power of vision.

Inflammation is of three kinds, adhesive, suppurative and ulcerative. I shall only treat of the healthy kind in this Lecture. Inflammation is not necessarily a disease, because disease always tends to a dissolution of the part; but inflammation is sometimes necessary for its restoration. In the healthy state it is of a pale red colour, accompanied with a preternatural sensation; if seated in the skin, very often preceded by itching: heat and a dull throbbing pain accompanies it. Weakness is never a disease, tho. it is often a predisposing cause of it. The causes of inflammation are Chemical and mechanical, or fever. Of the first are, heat, cold, acrid substances, caustics &c. Of the Second are wounds, bruises, pressure &c Inflammation does not always immediately follow the application of its cause, 24 hours sometimes intervening. A cause that will at one time excite an inflammation of one kind, will at another time in the same constitution excite a different one.

Different remote causes have been supposed to produce different kinds of inflammation, but I think the variety is owing to difference in situation of the affected part; for the same remote causes will produce Erysipelas in the face, and common inflammation in other parts. Fever is sometimes the remote cause . . . . . Inflammation depends greatly on habit. E. G. A person unaccustomed to work, will blister his hands very soon, and a person unaccustomed to a high degree of heat will bear much less without injury, than one daily exposed to it. If suppuration follows inflammation, it is termed critical abscess. The healthy kinds of inflammation are Adhesive & Suppurative. An adhesive inflammation is an increased action of the vessels causing an exhalation of the coagulating lymph. It begins in the small vessels and spreads from a point in which (for the most part) it begins. Suppurative inflammation is an increased action of the vessels secreting Pus. In adhesive inflammation, the matter which forms the union is coagulating lymph. The red globules are thrown out likewise, but are again absorbed. When inflammation supervenes in a particular part, that part receives a more copious flow of blood thro, it than a healthy part, in consequence of the increased action of the bloodvessels. That there is an increased action is proven by the parts being of a pale red colour. If there was a diseased action, it would be of a purple colour. The diameters

of the vessels are likewise increased, which is proven by Dr. Hunters experiment on the ears of a rabbit. The swelling in inflammation arises both from the thickening of the coats of the vessels, and from the extravasation of lymph. The swelling is greatest at the point where the inflammation commences. The pain is produced by the spasm, or convulsive action of the vessels; much in the same manner it is produced in cramp or tetanus, or by distention. When inflammation precedes gangrene, it is of a purple colour. The heat of an inflamed part is considerably inckeased, but never rises higher than the source of ~~inflammation~~ circulation. The lymph ~~seated~~ in in adhesive inflammation, becomes, in time vascular, and may be injected. Mr. Hunter proved that coagulating lymph was thrown out, by observing that the matter found on the surface of inflamed cavities, corresponded in every particular with the lymph of the blood when divested of serum and globules. The coagulable lymph is changed in passing thro. the vessels; for if it be thrown out on the internal surface of a vein, it refuses to mix with the coagulating mass. The effects of adhesive inflammation on the constitution vary according to the degree of violence and the part affected. It is attended with little inconvenience when seated in the skin; but in the theca of a tendon, or periosteum, it occasions great pain, producing sympatematic fever, if the inflammation be great.

The pulse is full, hard and quick; blood drawn is sizy. This inflam=mation often terminates spontaneously, in which case it is termed spontaneous resolution, or adhesive. A man 36 years of age received a bruise on the leg, by the fall of a ball of iron upon it; six days before inflammation came on, I was call=ed to see him; his body was all in a tremor, his extremeties were cold and clammy, his pulse small and quick, his strength much diminished. He was cured by a dose of laudanum, and the application of it to the part affected. I have seen death in=duced in this way by the inflammation of lacerated wounds of the joints. Tumors frequently occur in the breasts of women; and likewise they occur in the throats called scirrous tonsils, and are produced by the effects of simple inflammation, occa=sioned by the lymph not being absorbed when the inflam=matory action ceased: this takes place in glandular swellings & forms what is called ~~glandular swellings~~ a scirrous tumor. By this it appears there is no cancerous tendency in the blood.—

Inflammation terminates also by the secretion of serum.—

If there be a secretion of any fluid from the part inflamed the inflammation does not run so high. Blisters which run well are much easier cured than those that do not.——

It is highly probable that inflammation of the brain ter=minates in what is called hydrocephalus internus; and of the

chest by forming hydrothorax. Local inflammations are frequent=ly removed by fever.

Hemorrhage sometimes terminates inflammation. A remark=able instance of inflammation of the eye, which resisted bleed=ing and other remedies, was cured by the accidental breaking of an artery of the eyelid, which bled considerably. I have seen an incurable case of the fistula in ano from not bleeding in the inflamitory state.

If inflammation be not stopped by some of those means it proceeds to suppuration. When inflammation happens from accident and proceeds too far, we should attempt resolution in general. But there are cases in which resolution should not be attempted. As 1. In very warm weather lest we induce tetanus. A generous diet and cordial drink should rather be recommen=ded. 2. If occasioned by a constitutional disease as fever. 3. If it be owing to the removal of any worse disease. When it oc=curs in any important part it should always be attempted to be resolved. Some inflamation is necessary for the restora=tion of the part.

Treatment. To effect a cure, in the first place the remote cause should be removed. 2. Reduce the inflamitory action that the parts may take on a natural one: This is effected by two kinds of remedies, Constitutional and Local. The constitu=tional

ones are, low diet, bleeding, purging, nutral salts, antimonials, diluents, tamarind-water &c. Low diet tends to emty the bloodvesels Bloodletting is the most powerful remedy in inflammation, since inflamed vessels are under the necessity of contracting to adapt themselves to the column of blood: and as contraction is a very different action from inflamation, it allows the parts to take on a natural action by diverting them from the inflamitory one. Bloodletting acts in two ways: first, it removes the stimulus of distention by lessening the impetus of the blood: and secondly, by lessening the volume of the blood itself. Of the 2d. Gen. remedy Purging; this also acts by lessening the action of the vessels; except when they produce nausea, then they act sympetheticaly: tho. we are obliged sometimes to decline it on account of the inconveniance attending it. Nitre, Sal-armoniac, Glaubersalts, have been advised; and Antimonials have sometimes, been joined with them. Mercury often acts powerfully in the cure of inflammation. 4th. 1. Rest. this is highly serviceable; the whole body should be kept quite still, and the room of a moderate temperature.

The local remedies are, 1st. bleeding, by scarification leeches & cups. If a fever be caused by inflamation, general bloodletting should always be premised. 2d. Cold; this should only be used when the heat of the part is disagreable,

+ Particularly serviceable in inflammation from punctured wounds.

and should never be carried so far as to become disagreeable to the patient, else it proves injurious by acting as a stimulus. 3. Vinegar, Salarmoniac, preparations of lead, with or without laudanum, and laudanum alone. 4. Poultices, these are either simple or medical; simple, as bread and milk, the flaxseed poultice; the medicated are the simple poultices mixed with the medicines above mentioned. 5. Blisters, these are of very great use applied directly over the inflamed part, or in its vicinity: they should be used when you are fearful of too great evacuations. they produce resolution by the evacuation of serum. Blisters are of use applied to the inflamed part when we are apprehensive of tetanus. —

Of the good effects of adhesive inflammation.

They are instanced 1. in the healing of wounds. 2. In abscesses; The cells of the contiguous cellular membrane are united by it, which prevents the pus escaping from the cavity of the abscess, and so stops the further progress of inflammation. 3. Cists are formed for the lodgment of extraneous bodies, as balls, shot, glass &c. I was once surprised at the tenacity with which they are held in those cists, when I attempted to extract some shot lodged just under the skin. 4. In abscesses of the liver or any viscus, the pus in its passage to the surface of the body is prevented from being effused in the cavity of the abdomen, by the adhesion of the affected part of the viscus to the parietes of the cavity.

Lecture 2d.

Of Inflammation Suppurative

We come now to speak of inflammation suppurative. If inflammation be not stopped by some of the means above mentioned, it proceeds on to suppuration. Here the inflammation acts by secreting pus, and the suppuration which takes place is a third remedy or mode of cure. The contact of air to internal surfaces have been supposed to produce inflammation. I once heard a professor say that he thought the action of the air occasioned inflammation of the chest in a case where the pleura had been punctured with a redhot iron: notwithstanding the violence of the act, he he imputed the inflamanation to the action of the air. I once - tried an experiment on a cat, in this manner; I made an incision thro. the pleura, thro which I passed a tube, and filled one side of the chest with air; I then withdrew the tube and closed up the wound. In this situation it remained three days without any remarkable alteration. It was then suffocated and upon examination, no possible difference could be observed between the two sides. I mention this to shew that the effects of air are not so various as is often supposed, and to prevent Surgeons from hurrying too much in closing up a wound with a view of keeping the air from its internal surface.

No. 2.

When adhesive inflammation will not admit of resolution it goes into the suppurative stage; this is characterised by an increase of pain, often attended with a throbing or shooting sensation; the swelling enlarges, the parts become softer, and at length a fluctuation is felt; there is at the same time an alteration in the colour of the tumor, from a deeper to a paler red, also, rather a yellowish appearance in the most prominent part of the tumor. It is now what may be termed an abscess or circumscribed tumor containing pus.

Abscesses are often attended with rigors, which are succeeded by fever and clammy sweats, which symtoms are removed by evacuating the pus. If the pain be very great it may be relieved by opium; this will be best effected by combining the opium with small doses of emetics. A poultice of bread and milk is usually applied to the tumor, in which a prominent part is observable, and here an opening is, in general, naturally made, by an absorption of the parts beneath the skin, However, an opening is sometimes made by the skin loosing its tenacity and sloughing away: Where this takes place it generally makes a pretty large opening. 1st. If the time of this natural opening be protracted too long, it becomes necessary to make an artificial one: Several circumstances require this opening to be made early. 1. If the absces be situated on the thorax

or abdomen. 2. If situated over any of the joints 3. If attended with great pain, as in Paronychia. The pain in paronychia, may be almost immediately removed by opium. For suppuration attended with hectic fever, the constitution sympathises with the local irritation, which the power of the constitution is unable to overcome, as when the fever is brot. on by ulcers, or affections of the tendons or ligaments, or of any of the vital parts.

These symptoms of hectic are great lassitude, weakness loss of appetite, cold night sweats, aptness to sweat on every little exertion; the pulse small, quick, and frequent; urine high coloured; it frequently terminates in Diarrhoea.

The process of suppuration sometimes suddenly stops, and the matter already formed, is absorbed. — This is a happy termination, and of course, it is a desirable thing to find medicines which will produce this effect; accordingly many medicines have been employed for this purpose. Emetics and nauseating medicines have been known to produce this effect. The matter formed in buboes has been absorbed by vomiting occasioned at Sea. I have observed bleeding, blistering, and purging, to be of service. Hectic fever, instead of being induced by suppuration as frequently supposed, is sometimes cured by its promotion; an instance of this kind occured in an amputation of a leg; when the patient was afflicted with hectic, from a

diseased joint, which ceased after the operation (Hectic has been cured by issues which increases the quantity of pus) when the surface and quantity of matter were increased; a convincing proof that hectic fever is not the consequence of the absorption of pus. If suppuration proceed to fluctuation so that it may be distinctly felt, the opening should be effected by making an incision into the abscess. It is very customary to apply plasters of different kinds to assist in breaking tumors containing pus, such as resins, saccharine substances &c. Scarce any of these do good; tho. that applied next preceding the eruption generally obtains the credit of accelerating the discharge. I believe they act merely by softening the part. Blisters promote absorption by irritation. Abscesses on the Cranium should never be left to open of themselves: such as impede respiration should be immediately opened. The tonsils are so enlarged by suppuration as to impede respiration; they should always be opened under such circumstances. Matter does not always absorb towards the skin. I. E. in tumors containing pus: Absorption does not always take place between it and the external surface of the body, but sometimes makes its way more internally; hence the necessity of opening abscesses when they form over joints, or over any cavity. I knew a patient afflicted with a periodical pain in the head, which afterwards was

found to be owing to an abscess in the calf of the leg; upon opening which, the pain ceased. I have twice known all the symptoms of nervous fever produced by a small abscess over the abdominal ring. In the first case the patient died, owing to the ignorance of the cause of the disease: in the second case, the abscess was opened and the patient recovered. I have known another similar instance, of one situated in the axilla. Abscesses in the face should be opened soon, to prevent the fear that would ensue by leaving it to open spontaneously, as it would absorb much more of the parts. ———

There are two ways of opening abscesses. 1st. by incision, 2d. By producing an escar by means of caustic. The first should be prefered, unless in cases where the timidity of the patient prevents it; in which case a thin layer of lapis septicus may be applied for the space of 8 or 10 minuits; the part it touches will soon slough off and give vent for the matter or pus. After the pus is discharged it is to be treated in the same manner as an ulcer. Pus is a lighth straw coloured fluid of the consistance of cream, containing a number of Globules. it does not coagulate by heat if exposed to it, but evaporates to driness; it does not readily putrify; it is specifically heavier than water, and is easily miscible with it; it is not corrosive. It is said to be of a sweetish taste; it is

distinguished from the other fluids of the body, by its containing globules of a peculiar colour nature, which are suspended in a fluid coagulable only by Salamoniac, which is not the case with any other animal fluid. Mr Hunter has observed that it is a secretion of the vessels, taking on the nature of glands, and that the globules are not formed till after it is thrown out of the vessels. When practicable, suppuration should be obviated by resolution.

Inflammation Ulcerative.

Ulceration takes place mostly merely after suppuration; and suppuration takes place after the extraction of dead ulceration. In ulcerative inflammation a part is always lost, this is removed by absorption. It commences mostly after the suppurative stage, but has been known to precede it; as in cases of cancre, and as in some particular irritations, or where sudden death of a part has taken place. Pressure has produced this stage without suppuration. That part of the body ulcerates soonest which is nearest the Surface. The absorption of the parts in ulcers is always attended with pain and inflammation, which is called soreness. But this is not a necessary symptoms of ulceration; for we find that scrophulous ulcers are not painful when they proceed slowly, but when rapid, they are attended with great pain.

I shall now say a few words of abscesses; and first of

Mammary Abscesses

Remarkable instances of ulceration attended with inflammation, occurs in mammary abscesses of women. These may either be seated in the glandular part, or in the cellular membrane. It seldom occupies the whole breast. If a part of the glandular structure be diseased, the secretion of milk is commonly diminished: but if the whole of it is affected the secretion of it is suspended altogather. It is attended with shooting pain that extends to the axilla. If the abscess be seated in the cellular structure, the secretion of milk is not much impeded. They are mostly preceded by a chilly fit, accompanied with pain of the affected part. There is sometimes more than one tumor felt. The time when this disease most prevails, is the three or four months after delivery, tho. women are always subject to them while they continue to suckle. These cases we seldom or never see till they have arrived to a considerable degree of soreness; owing to the woman supposing herself quite competent to the cure; tho. they always fail in their attempts. Altho. Suppuration is mostly the result of inflammation of the breast, yet I have seen it terminate in Edema

and the swelling to be so great as to protrude the parts round the nipple so as to hide it. The swelling did not come on till ten days, and I was not called in for six weeks. When the adhesive inflammation takes place, the coagulating lymph is sometimes thrown out, without being again absorbed after the inflammation has subsided. This forms an indurated gland or Schirrus, I have seen them of various sizes. These are noways cancerous, because they have yielded to the antiphlogistic regimen. These affections are frequently owing to mechanical causes, as tight dress &c. and to over straining the vessels by long distention with milk. They are sometimes produced by the persons taking cold. In those cases where the glands are indurated, they seldom return to their former size. Sometimes the glands are very much reduced in size and never secrete milk.

Treatment. If called in the forming state bleed according to the strength of the patient. Exhibit a mercurial purge, and put the patient upon a strictly vegetable diet. The breast may be anointed with warm oil. If it be convenient for the patient to be confined, it should be done; if not, support the breast by passing a handkerchief round the neck. If inflammation continue, venesection may be repeated; and application of leeches to the parts will

be found of great utility. Bread and milk poultices, with lead water, are highly serviceable, after evacuations have been premised. If these do not give relief, and the inflammation continue, a blister should be applied. A great variety of plasters have been used, and are often recommended; but I believe they are all of doubtful efficacy. The blister is not so painful as might be expected; women who had not enjoyed ~~rest~~ for many nights before, have been known to sleep sound while it was operating. But be sure to keep up the evacuation per annum. An application of Sal-ammoniac and vinegar is frequently advised, it is, however of no use. Suppuration seldom takes place if properly treated from the commencement of the disease; but sometimes from delay in calling in a Physician, or from his want of judgment, it does occur. If it become necessary to open the abscess, it is sometimes advised to do it freely by making a large slit; but I have succeeded by making a puncture into the abscess, and introducing a bougie to keep it open. The bougie must be drawn occasionally to void the within collected fluid, or pus. In the case of oedema, I applied Salammoniac, mercurial ointments &c. to the parts, and depleted generally, by bleeding, purging &c. but without any effect. The application of a blister removed

the complaint. I removed an indurated gland attended with slow fever, which was afterward cured removed by bleeding and the antiphlogistic regimen) by blistering and afterwards dreping with mercurial ointment; where the schirrus was as large as the first. Mercurial ointment is good in resolving tumours. Weakness in the joints, especially in the hip joint, without any apperent cause, is generally a species of inflamation, which may be cured, if taken in time, by purging. Swellings are occasioned by a secretion or throwing out of coagulable lymph into the cells of the cellular membrane. Vessels which are inflamed carry a coagulating lymph which adheres to their internal coat, and becomes vascular. ——

Lecture 3d.

Of Paronychia.

Paronychia is a violent inflammation, occuring mostly at the ends of the fingers, which frequently ends in suppuration. According to the seat of the disease, it is attend with trifling or excruciating pains. Paronychia may be divided into four kinds. 1st. when seated in the cutis vera. 2d. In the Adipose membrane under the skin; here the pain is much greater, and matter is frequently effused under the nail. The whole finger becoms swelled and painful. 3d. In the theca of the tendons, and 4th. In the periosteum. In this last case the pain is very great, tho. without swelling at first. When it takes place in the adipose membrane, there is then more danger of mortification taking place. The matter formed in these two last species of paronychia, has sometimes passed along the course of the tendons under the ligament of the wrist, and formed a tumor at the lower part of the forearm. The bone often becomes carious, and sometimes the tendons slough away. I have seen mortification from this cause. It is a difficult matter to point out the causes of whitlow. I have seen it produced in one instance by the bite of a Squirrel.

Cure. In the cure little attention is necessary to be paid to the first kind. It may be opened and dressed with unguentum citrinum, or simple cerate containing sacharum saturni. When it is situated deeper than the skin, make an incision down to it, and if any part of the bone be decayed it ought immediately (if possible) to be taken away. The dressings may be either dryfint or a poultice. Boiling water has likewise been advised in cases of paronychia. I believe when it is of any use it acts merely as a rubefacient; nothing else, however, than opening the part is necessary. If matter have travelled up the wrist it should be let out at the most protruding part. Sometimes the orrifice, if small, grows up with fungous and prevents its healing. For destroying this excrescence, escharotics will be found tedious and often in vain; it should be remedied by enlarging the incision.

Of the Psoas Abscess.

This disease is seated in the cellular membrane under the psoas muscles; where matter is deposited in a cist of the cellular substance. Any of the remote causes of inflammation may produce this disease. In its progress to the surface of the body, it generally follows its course down along the bones. Generally it causes pain at first in the lumbar regions, but

sometimes goes off without, for three months causing any pain. The thigh on the side affected is weak, the patient cannot well stand. He generally bends the body to relax the muscles on the side affected; he cannot well rotate the thigh and is afflicted with rigors. It sometimes happens that months elapse before any one mark of it can be seen. Its situation is anteriorly. - It is not the same always. It sometimes comes on the loins, and I have seen it form on the buttocks. Sometimes the tumour is situated on the upper part of the thigh, sometimes at the lower. The integuments of the abscess are not discoloured. The tumor is most tense when the patient stands upright; when lying down it is soft and flaccid. If pressure be made on the abdomen, it will be flattened, and be more protruded in the thigh and vice versa. Coughing, and coughing render it more tense. The fluctuation may be readily felt. These abscesses never open forward into the cavity of the abdomen; but have sometimes destroyed the sides of the contiguous vessels, and thereby produced fatal hemorrhagy. If they continue a long while, they may occasion a caries of the vertebra - When it protrudes at the upper part of the thigh, it appears like hernia. It has also been confounded with fistula in ano.

Treatment. If we are called to see the patient

Viz. leaning to one side.

soon, we must keep him at rest, and he must avoid all animal food. Bleeding, scarifications on the back; leaches also are of service. Purge and cause the patient to lie on his back. a little Blister should likewise be applied to the upper part of it. Issues on the loins. When the tumor has formed externally it has been disputed whether the abscess should be opened or not, and some authors are affraid to make an opening into the cavity; but where it is long in opening it puts the patients life in danger, if it be left to open itself. Mr. Hunter has observed that all cavities will inflame if opened, unless they unite by the first intention. He observed that the inflamation would attack every side of the cavity, which is the cause of all the other symptoms that follow. Mr. Abernethe taking the idea from Mr Hunter (no doubt) has proposed to open it so that the sides of the wound may unite by the first intention. He has proposed to perform the opperation with a lancet, the puncture to be made in the longitudinal direction of the fibers; first to make an incision thro. the skin and then to push the lancet obliquely* thro. into the abscess, by which means we make a valvular opening. We should use no probes or any thing to ascertain the depth of the sinus because they would irritate the part. When the matter is discharged bring the edges together with adhesive plaster

After the matter is discharged a few times in this way, it may be opened with the lancet freely without any danger, as the sides of the cavity will be brot. together and so closed as to become inflamed. This is the best method of treating the abscess. I have tried this method myself and find it to answer very well, altho I have never been able to succeed in effecting a cure, because all the cases I have seen, have been attended with a caries of the vertebra. However, very unfortunately the punctures do not always unite by the first intention, and where this does happen, the inflammation which was spoken of before, and which is the fatal cause, comes on. (he relates a case).

Besides the different inflamations before spoken of, there are some others, and first, of

Erysipelas.

This is an inflammation of the cutis vera. It sometimes begins in the forearm and spreads over the whole body It is frequently preceded by shivering, which is succeeded by a hot fit. The skin is of a light yellow in some cases and dark in others; if you press it with your fingers, the colour disappears, but on removing the pressure the colour returns. The pain is of a burning kind. The inflam-

mation

is often much diffused, frequently spreading in one part whilst it subsides in another. Situated in the face it is attended with itching. Erysepelatous inflammation differs from the adhesive inflammation, in which coagulating lymph is thrown out; but in the former (erysepelatous) serum is thrown out frequently in cells, which form blisters on the surface. Sometimes the tumor serum escapes into the cellular membrane, forming a tumor which feels like a gangrene. Suppuration sometimes supervenes, running from cell to cell in the adipose membrane, causing death. When mortification takes place in the cellular membrane, it is discharged in flakes like wet tow, and is very offensive. This is mostly the case when it is situated about the anus. Erysepelas generally terminates in about ten or twelve days.

Causes. The remote causes are so similar to those that excite common inflamation, that I shall not enumerate them. It sometimes comes on spontaneously, or without any apparent cause. — —

Cure. In England bark is the cure. The cure is much the same as in common inflammation. It may generally be removed by attending to the antiphlogistic regimen, before suppuration takes place. But when suppuration supervenes, it must be opened early to prevent its

escape into the cellular membrane. Poultices before suppuration takes place, are improper. Rye-flour sprinkled on the part is very useful, and affords ease.

The application of a blister in such a way that shall be partly on the sound, and partly on the inflamed part, is of great service. When the part begins to heal, an exfoliation of the cuticle, like bran, is a favourable symptom. —

Oedema.

Oedema exists in the skin, tho. it may be situated deeper. In inflammation, water is evacuated. It is probably the same with adhesive inflammation, originally, taking place in parts disposed to dropsy. It is attended with a burning pain. Treatment. — The usual application is brandy, or bread and milk poultice mixed with it or with Saccharum Saturni, which is more useful than anything else. —

Burns.

The morbid effects produced by the application of heat, differ according to the intensity of the application, and the times of its continuance.

Its effects are, 1st. when the degree of heat is low, a

redness only of the part affected. 2d. Vesication, causing a separation of the cuticle, attended with an effusion of serum. — 3d. The death of the part, forming an eschar by the caustic. The heat of the burning coal, or of any of the molten metals will produce this effect. Sometimes the bones are discharged by the application of heat, and it frequently terminates in death. When the life of a part only is destroyed the patient does not feel any very great pain after the first effects are over, till after 3 or 4 days, when the inflamitory process of sloughing takes place for the restoration of the dead part. I saw a little boy who undertook to walk the edge of a caldron, which was full of very hot water in a soap manufactory, when his foot slipping, he plunged into the midst of it. He was wet nearly two thirds over, and his clothes keeping the heat to the part a considerable while, he was very much burned. His pulse was scarcely perceptable, his extremities cold and a heavy drowsiness prevailed. He was very restless and kept constantly changing his position. He spoke not at all, except when asked a question, and then he answered very rationally; and when interrogated respecting his feelings, he said he felt no pain. He died in about 6 hours. When these symptomes are produced by fire, the patient, seldom

if ever recovers. Burns affect old people the most, tho they prove fatal at times to allages. A deep burn if it be of small extent, or spread but little, is but a small injury; but if it be of great extent tho. very superficial, it is extremely dangerous. When burns happen on the head they sometimes occasion inflammation of the dura=mater. Burns occasioned by any of the molten met=als, appear of no serious consequence at first; but after sometime the skin and vessels slough off, and leave the bones bear; hectic fever ensues, and the patient dies. — Burns occuring over large joints frequently occasion alarming symptoms; hectic fever comes on and ~~exsupuration~~ ~~ensues~~ ensues and emputation is absolutely necessary for the recovery of the patient. —

I consider inflammation resulting from burns differing from all other inflammations. In the first place the pain is of a different kind from that of all or any other inflammation, being of the burning kind. Second, in not being capable of resolution, and causing ulceration of the parts underneath, which throws up fungous granulations that are very difficult=ly suppressed. 3d. The cicatrices formed by ulcers resulting from burns have a disposi=tion to contract much more than other cicatrices

not the result of burns; causing thereby a much greater deformity of the part affected. 4th. They are cured by totally different remedies, as Volat. Alkali, Spt. turpentine.

Treatment. The remedies employed in cases of burns are very numerous; they are either general or local. Most authors advise depleting remedies in burns indiscriminately; but they should not be used unless fever and great inflammation supervene. If the burn be extensive and great weakness attends, the patient may be supported by bark wine, and even brandy and water. He should have any nourishing aliment he could desire. If the extremities be cold, apply fomentations. If from this invigorating plan of treatment, inflammation and fever should supervene, bloodletting and a more spare diet would be necessary.

The local remedies generally avoided are cold water soap suds, and, Mr. Earl in a small treatise recommends ice above all other remedies: Vinegar and water; this is a good application; lime water and oil, these form a crust like a cuticle; and the common people use potatoes scraped. Of late very stimulating applications have been used, as volatile salts, spirits of turpentine &c. Latterly Mr. Kentish has used spirit of turpentine

combined with Basilican, and I have used it with very good effect in many cases. —

The remedies counteract

The most of these remedies, as cold water &c. act only as palliatives, relieving the pain, and soothing the part for a while; but the turpentine and basilican spread on rags and applied, is a permanent application and very useful. Vol. Alkali and vinegar are good applications. I have used vinegar with very good effects. The turpentine and basilican should only be applied to the inflamed part, for if it be in contact with the sound skin, it will cause pain and great inflammation, and swelling of the part. We are frequently not called to cases of burns, for several days after they have happened, and a number of applications have been tried. I have applied the turpentine and basilican when not called for three or four days after the accident. In one case of a burn of a child, the turpentine and basilican was applied, but owing to the superstition of the parents, together with the clamours of old women, it was omitted for 3. or 4 days without my knowledge. The child became worse and a fungous arose over the surface of the burn, I was sent for again and

the part was sprinkled with burnt alum, and the turpentine and basilicon were again applied, which soon cured the patient. In the case of a patient who was burned with gunpowder this medicine was used, the pain entirely left him in about 4 hours after the application of the ointment. However, he presently complained of a pain in the little finger, which upon examination appeared not to have any of the ointment upon it, and upon its application to this part, the pain quickly ceased, the inflammation subsided, and he was soon cured. Spts. of turpentine is one of the best applications in these cases.

Inflamed parts, when in contact are very apt to grow together, so that we should be extremely careful to keep the dressings between inflamed surfaces which lie in contact with one another, while they are suppurating and granulating, otherwise the parts will adhere by the union of the granulations. I knew a case where the fingers of one hand in consequence of a severe burn, adhered to each other, which evinces the necessity of keeping the dressings between such inflamed surfaces. I once knew a scald upon the parts of generation of a youngman, which for want of proper care to keep the parts separate whilst healing, all united together, the penis adhered to the scrotum, and that to the thigh

The young man did not like such a confused mass, and applied to Mr. Hunter for relief, who undertook his case, and was fortunate enough to succeed in liberating about a couple of inches, to the no small satisfaction of the patient.

Burnt parts sometimes form a ligature round the limb stopping the circulation of the blood, and thereby producing mortification. Whenever this circumstance takes place the band should be cut open.

Lecture 11th

Mortification.

Mortification is the certain destruction or death of any part. It is of two kinds, 1st. Inflammatative, or that which is preceded by inflammation. 2d. Debilitative, or that proceeding from langour. Of the first kind, the causes are violent contusions, and the application of violent degrees of heat or cold &c. 2d. The destruction of the circulation of the blood in the part, either by pressure or by tying the principle artery: they both operate in the same way by cutting off the necessary supply of blood. When a part looses its life by mortification, its first becomes purple, then livid, and then black

The cuticle soon separates from the other parts. Bread & milk poultice should be applied to the part, and continued till the dead parts separate. In cases of violent inflamation, the evacuations should be promoted, and opium given to relieve the pain. A small degree of inflammation is salutary. Intense cold, if not severe enough to kill, produces first a paleness of the exposed part which is succeeded by redness, and is attended with a burning sensation and soreness of the parts affected; if the cold is continued it loses it sensibility, and at length dies. Snow or fresh spring water should be applied to the affected part; after which the warmth of the part should be gradually increased to a comfortable state. Mortification often comes on without any apparent cause. Of mortification preceded by inflammation, there are two kinds. The first is when the inflamitory action is too great for the powers of the part to support. In the second, there is something peculiar in the nature of the inflammation, so that the inflamitory action does not seem to produce its destroying effect by the degree of violence. Wine, by a bungling operator on the Hydrocele injected into the cellular membrane of the scrotum, has produced inflammation and mortification of the whole cellular substance and bottom of the scrotum, which by being destroyed, sloughed, and the whole of the cellular substance came away with an

intolerable factor. The escape of urine into the cellular membrane has produced the same effect.

Mortification often takes place in the toes, (of old people — especially) it commences with pain and slight inflammation of a purple colour: vesications sometimes take place round its edges, but not always; the progress is for the most part slow; but in some it is rapid and very painful; the upper part of the foot swells and the cuticle becomes detached. I have known it to arise from the prick of a pin in cutting corns. In the cure, opium is the best; all stimulating medicines, as the spts of turpentine essential oils &c. should be avoided. Never make scarifications or apply stimulating substances to assist in throwing off the sloughs, for when a mortification ceases the parts will slough off without any assistance. Blisters should not be applied to this kind of mortification, for whatever irritates or stimulates the part increases the disease. It has been advised to amputate in this disease, but this should never be done while mortification is progressing, lest it attack the stump, and the patient undergo much unnecessary pain. In the case of mortification of the foot which came on with a very offensive smell, I was induced to amputate it at the particular request of the patient. It was performed a little above the ankle: the arteries were completely ossified, so much so that I was obliged upon tying them up, to mash

thire surfaces together with my thumb and finger with a view to prevent hemorrhage, a circumstance which often occurs in such cases. Pressure often occasions mortification in parts contiguous to the os Sacrum, in persons who are long confined on their backs from broken bones or other causes, and is most commonly preceed by inflamation. I have seen mortification produced in the arm by pressure of the bedclothes.—

The symptoms of mortification are a burning sensation, a dark red colour disappearing upon pressure and returning slowly. A tumefaction takes place which readily receives the impression of the finger; small blisters containing a thin acrid serum, arise round the edges. As the disease advances the red globules are thrown out.

The remedies for mortification are General, and local,— The general remedies are bloodletting if inflammation be present; but if it proceed from langour or debility of the parts, (if the theory I have announced that the disease depends upon too much action, be just) then all stimulating applications, as essential oils, balsams, cordials, scarifications, with opium nourishing diet, bark &c.—— If the patient be accustomed to the use of wine it may be continued, to a certain degree, in every instance. The local remedies are blisters to the part affected; the charcoal pouttice is highly serviceable to prevent the

smell of the dead parts. Where mortification ensues from erysipelas in the cutis vera, and pus has made its way into the cellular membrane, it should be laid open freely, and treated with bread and milk poultice. In mortification of the legs pressure should be avoided, for this purpose the leg may be supported by pillows placed under the thigh. I have been long in the habit of using nitric acid diluted with an equal quantity of water; it corrects the fetor by stopping the putrefactive process: It may also stimulate the absorbents to a quicker action, and cause them to separate the dead parts more rapidly. It should not, however, be applied too near the living parts or it will cauterize them. If the weather be very warm, maggots are apt to form in the dead parts; washing it with this diluted acid will remove them.

The second species of inflammation is that peculiar kind which produces carbuncles; they are circumscribed, broad, hard tumors; they begin in the skin like pimples, are of a dusky red colour, with pale edges, attended with burning pain. A kind of suppuration takes place in the cellular membrane, but good healthy pus is never formed. They occur on the back and sides, and most frequently in people who have lived well. They are dangerous if large and numerous; they sometimes, tho very rarely occur on the head: they are dangerous on the head if large and numerous; much, however, depends on the

strength of the constitution.

A case of Dr. Wistars, will serve to show the peculiarity of this kind of inflammation. He was called to a man between 50 and 60 years of age, in consequence of one of these carbuncles on his leg; a circle of inflammation surrounded the tumor. The Dr was called about three days after the commencement of the disease: after trying a number of remedies, Dr. Mauges was consulted, who said he was well acquainted with them in France and had cured several of them by scarrifications; accordingly it was scarrified transversely about ¼ an inch apart all over the surface, and then a circular incision made all round it. This effectually cured it. It operated by changing the mode of action to the adhesive inflammation.

Some years ago I was led from the uncertainty of remedies employed in gangrene, to seek for some remedy more certain and effectual in its operations. From the good effects of blisters in many cases, I was induced to try them in mortification, and they succeeded beyond any most sanguine expectations. The good effects of blisters may be seen in the case of Capt. R. A. (related in the ..... volume of Dr. Cox's museum) who under mistake had used persecaria in a common after occurrence of life, in consequence of which a violent inflammation ensued in the regio ani and on the scrotum. The antiphlogistic regimen was tried but

without any benefit: And after, in the most dangerous state, resisting bark, and other antiseptic remedies, it was cured by the application of blisters to the part affected.

The pain in inflammation, mortification, is caused by inflammation and spasm of the vessels. A patient of mine was afflicted with violent pain in the foot; a small reddish spot was seen on the top of it, appearing, at first, like ecchymosis, which afterwards disappeared and then came again a little above the ankle: the patient now complained of great pain when the foot was raised up, but which was somewhat abated by letting it down, owing to the diseased action of the vessels; because the blood filling the vessels, overcame the spasm that was the cause of the pain, for when the foot was raised, the vessels were emptied of the distending blood, and the convulsive action of the vessels took place. A charcoal poultice was applied over his foot. His bowels were disordered owing to his having taken so much laudanum, which was obviated by his taking a purgative. The bark was given largely, to the extent of half a pound in 24 hours, but without any good effects. Applications of bark and brandy were made over the stomach, and 5 grs. of volatile alkali given every 2 hours. The bark was now omitted as it was found to be of no benefit. Some senna and manna were given to obviate costiveness; the mortification still increased. A blister plaster was applied

which stopped the mortification, and changed the livid colour which passed to a red under the blister. The fermenting charcoal poultice was omitted, and another blister applied just below the first on the limb which was of a dark colour and cold. The dead part was washed with a dilution of nitric Acid with equal parts of water. The mortified part after this gradually sloughed off, and the patient is now recovered.

When mortification is caused by inflammation a blister should be applied. Blisters have lately been found as effectual in the case of Carbuncle as any other kind of inflammation, especially in relieving immediately that distressingly burning sensation. I lately cured one in the back of a lady as large as a common plate, which she compared to a warming pan of hot coals. The sensation was very distressing: As soon as the blister was applied the mortification ceased, the dead parts sloughed in a few days, and the sore healed kindly.

Mr. Hunters theory of mortification, I believe is now pretty generally received, that is, an increase of action beyond what the powers of the part can bear. But I am rather inclined to think that in every species of mortification, there is something peculiar, leading to the death of the part; something more than the violence of the inflamitory action; for if it depend on the violence of action alone, the application of a blister

which is highly stimulating, ought to produce the death of the part more quickly, by producing a still greater increase of action; but on the contrary they effect a cure, & I believe, by altering the disposition, by changing the mode of action from the diseased to the healthy kind.

Lecture 5.

Wounds.

A wound may be defined a separation of external parts by mechanical action; they differ according to the situation of the part injured, and the instrument by which the injury is sustained.

There are two kinds of wounds, first incised and second, contused. An incised wound is made by a clean sharp cutting instrument. A contused wound is always accompanied by a bruising of the soft parts, and is divided into three kinds, Viz. Lacerated punctured, and gunshot or penetrating wounds: they are always attended with a greater or lesser effusion of blood. In incised wounds there is generally a considerable flow of blood; but in lacerated wounds, large vessels are often divided without any considerable hemorrhage. Incised wounds bleed much more than contused ones, because in the first case there is nothing to prevent a flow of blood, but in the latter, the dead matter at the ends of the arteries

caused by the contusion, act as a stimulus to the coagulation of the blood (he relates a case from Cheselden) I once saw a case where a boy had his arm ground off in a mill between the elbow and shoulder; in this case scarcely any hemorrhage occured, owing to the contused ends of the arteries causing the blood to coagulate in their extremeties, and forming plugs that stopped the hemorrhagy An incision by a knife would have caused a much greater flow of blood. There are three ways in which hemorrhagy may terminate in contused wounds. First by a diminished power of circulation; Second, by the coagulation of the blood, forming plugs Third, by pressure caused by the effusion of blood into the cellular membrane, which pressing on the sides of the vessels lessens their diameters. Bruised parts cannot bleed much, the hemorrhage is stopped by the bruise, causing the coagulation of the blood: the coagulation takes place first round the edges of the vessels. Contused wounds, by the violence of the pressure, occasions the death of the ends of the vessels.

In incised wounds, the first thing necessary to be attended to, is the stop of the blood; this sometimes is in great quantities but not unfrequently a short time after the injury, it spontaneously ceases; a coagulation is formed, and, as it were a plugging up of the ends of the vessels. If this be not the case, it may sometimes be stopped by pressure, made by the fingers —

but should this fail, a tourniquet must be applied above the elbow if the wound be on the arm; if the wound be below the knee, it must be applied on the thigh, because there being but one bone, there, the pressure will be more effectual: if it be applied on the thigh, a compress or pad must first be applied over the artery. The hemorrhagy being stopped, the part must be washed clean with warm water, and search made for the bleeding vessels, which being found they must be drawn out with a tenaculum, and secured by ligatures. It is necessary to tie both ends of the bleeding vessel, if it be large; otherwise the hemorrhagy will be carried on by the anastomosing branches. When an artery is divided in the body so that it cannot be got at easily; it is necessary to press the tenaculum along with the finger (after previously tying a simple knot over the finger and tenaculum) till you come to the arteries; as soon as you can get hold of the bleeding vessel, slip the noose over it and secure it. In cases where the tenaculum cannot be used, where the vessels have so retracted that we cannot see their orrifices, recourse must be had to the needle passing it round a portion of flesh tying it up altogether. If the orrifice of the wound be too small, enlarge it with a scalpel; this does not often happen. If an injury is received on the upper part of the arm, the tourniquet cannot be applied; here compression with the finger, may be made

on the subclavian artery, just where it passes over the first rib; or if the injury be down to the upper part of the femoral artery, pressure may be made on the groin, just where the artery passes out of the abdomen. Sometimes pressure may be made above the wound long enough for the formation of a plug, or coagulum in the extremety of the divided vessel, and so put a stop to the bleeding. It sometimes happens that vessels are divided in such a situation, as not to admit of this kind of treatment, as the extraction of tumors from the mouth or nose which are supplied with several arteries. If only one vessel be divided, the hemorrhagy may sometimes be stopped, by holding a compress of lint for a few minutes on the bleeding origine. If the effusion take place from a number of small vessels, it may be restrained by a compress of lint, coal pulverised, the application of dry sponge, flour, agaric, vegetable astringents &c. But if this is insufficient, we must have recourse to the ancient but severe method of hot iron. We sometimes find that where the vessels are injured, if the external communication be small, that the coagulation of blood will stop the hemorrhage. I saw an instance of this kind where a boy in quarrelling with his schoolfellow, received a wound in the hand with a penknife: the immediate consequence of which was an effusion of blood into the cellular membrane of the muscles

causing a considerable tumor and great pain. The whole calf of the leg was very much distended; in this situation he walked home, increasing both pain and tumor; he went to bed, and next morning both the pain and tumor were gone; supposing himself well, he got up, dressed himself and went down stairs; when the tumor immediately returned, he went to bed again and the tumor subsided. This alteration was experienced two or three times; at this time I was called, and immediately pronounced it a wound of the popliteal artery, ordered the boy put to bed, and raised the limb to take off the pressure of the blood by its gravity. The volume of blood was considerably lessened by two or three bleedings. In about a fortnight or three weeks he was quite well. In such cases no probe should be used to ascertain the depth or situation extent of the wound, lest you destroy the plug formed in the orrifice of the artery, and bring on hemorrhage. The practice of some Surgeons stuffing the part full of lint is a very injurious one and ought to be avoided; lest you tare open the coagulum which nature has kindly formed. —

After the stoppage of hemorrhage, bandages, adhesive plaster, or sutures must be had recourse to for approximating the edges of the wound: and if the injury be done to the extensors of the limb, it may be necessary to apply a long splint to

secure the limb in an extended position. In most cases the adhesive plaister will be found suppficient; but in wounds of the abdomen sutures must be used, or else the patient will be liable to hernia at that place. The coagula should first be washed away; and then the adhesive plaster spread on leather or linen, should be applied transversely across the incision drawing the edges together. They should be applied in such a manner as to favour the escape of the blood, matter and pus, for if it be confined, it may collect in the cellular membrane, and occasion abscesses: this separation of the straps, is more especially requisite when an artery or a vein has been taken up, so that the pus that is necessarily formed, may have passage to escape. Often the sides of the wound are drawn together and secured by the adhesive plasters, a portion of lint suited to the size of the wound and spread with any kind of ceret, may be applied to it, on the top of which a compress of linen is to be applied and the whole secured by a bandage. These dressings should not be removed in 24 hours, in which time I have seen an union of the divided parts.

Inflammation is only now to be feared; and if it should run high, bloodletting must be used according to the symptoms; low diet, rest & purges may be employed occasionally to prevent costiveness. If no inflamation be present and the

patient be weakened, he may take some animal food, as some inflammation is necessary to cause a union. This practice is recommendable except in wounds caused by glass, which should be dressed to suppurate as parts of the glass may remain in the wound. Even transverse incisions may be remedied by adhesive plasters: these may be generally found sufficient, where the limb is placed so as to cause no restraint in bringing the edges together: This should always be preferred to stitching it up with a needle and that for two reasons. 1st. Avoiding pain & 2d. Every stitch of the needle adds a new punctured wound to the injury; also, the thread mostly occasions a suppuration by the irritation it produces: But there are some parts where suture must be used, as in the eyelids, nose, ears, scrotum, abdomen, and particular affections of the scalp & where the parts are so flexible as not to admit of other treatment. We should be careful in injuries of the scalp, not to draw the divided edges too much for the purpose of bringing them together, lest by over stretching the flap, we stop the circulation, and so produce mortification of the looped part.

No. 6.

Punctured wounds.

A punctured wound is a separation of the soft solids — communicating by a small opening externally. The irritation is greater here than it is in incised wounds. In cases of punctured wounds, we should be very careful in using a probe for the purpose of investigating the extent of the wound, since by that means we irritate the wound and destroy the adhesion that may have taken place, and thereby prevent or retard the cure. It is better to make an incision to examine for any extraneous substance near the surface, than to use the probe or forceps for that purpose. This should be done soon after the accident happens; or else it should be deferred until after suppuration takes place. — When matter shall have collected in a punctured wound, and the extraneous body by which the injury was produced, be not discharged; it then becomes very necessary to dilate it; and also where large vessels are wounded and cannot be taken up without. Again, it becomes necessary to dilate them when the constitution suffers from them.

In July 1805 a lad in getting over a fence fell upon a nail which ran into the flesh below the knee, about an inch upward toward the joint; febrile symptoms came on

and he complained of sickness in the epigastric, and pain in his neck and head; his pulse was frequent and quick. The wound was opened, and the pain was translated to the wounded part immediately; and excepting here he felt no pain in any part of his body. The wound was dressed with common poultice and healed kindly. I knew a Lady who was — thrown into convulsions by puncturing her finger with a needle; these convulsions continued for the Space of an hour and an half. The puncture was then dilated and the spasms went off without returning. When punctures or contusions happen during warm weather, they should not be healed up too speedily, but suppuration of the parts should be promoted, cordial diet and wine should be given, by which means we frequently prevent tetanus

Lacerated Wounds.

They are made with blunt instruments, which kill the flesh where it is separated. Anodynes, combined with small portions of nitres, so as to act as sudorifics, for the purpose of composing the patient should be given, and bread and milk poultice applied till the dead parts come away. If inflammation accompanied with fever supervene it must be remedied. If symptoms of mortification come on

ease the patient with opiates, and prescribe porter, wine, bark &c.

Penetrating Wounds

Are such as extend into the abdomen, thorax &c. When wounds happen in the thorax they are attended with great danger, by causing inflammation of the cavity. If the lung be wounded, or the puncture made thro. the pleura be not very small, the air gets into the cavity; the lung contracts and the patient performs respiration with great difficulty. If the lung be wounded, the patient coughs up blood, and there is likewise an effusion into the cavity causing great depression. Sometimes the vessels are injured so that we have to take them up. If one of the intercostal arteries be divided so that the tenaculum cannot take it up, pass a ligature round the rib by means of a needle and secure it in that manner. This I have never performed. Balls and shot occasion the worst of wounds because they tear the soft parts, and occasion a loss of substance. Wounds in the thorax occasioned by balls are very distressing they generally inflame the part where they enter, making suppuration and sloughing off necessary before the orrifice can heal; the patient is effected with anxiety and difficulty of breathing. Bloodletting, rest, low diet are necessary. —

The dressings are apt to draw into the cavity of the thorax in breathing; this indeed happened once in a case under my care. Care should therefore be taken to dress such wounds with adhesive plaster, or bread and milk poultice confined in a gauze bag. The edges of the wound when not kitted should be kept together for the purpose of uniting them if possible by the first intention. When the sides of the wound are approximated and united, the cavity is rendered complete, and the cure is effected. No bad effects are to be dreaded from the air that is left in the cavity. This never causes inflammation, as proven in cases of emphysema. The inflammation when it supervenes arises, Mr. Hunter says, from the stimulus of imperfection.

Two officers playing cards together, a quarrel arose between them, whereupon one stabed the other with a dirk, just above the right pap in the chest; the air had admission into the cavity when I saw him; his extremities were cold, his pulse small and irregular, his countenance, no symptoms of inflammation of the pleura appeared. I applied adhesive plasters over the wound, and the 3d day it had united; and on the 6th day he was able to walk, go out into the street &c.

Having spoken of wounds in general, I shall proceed to particular ones, and first of

Wounds of the Face.

As there are many cases in the treatment of which suture is always necessary, so there are likewise cases in which it should never be used. The antient surgeons used sutures in almost all cases of wounds; but in wounds of the face, sutures should not be used, as they always occasion deformity, by the marks of the stitches remaining after the wounds are healed. I have seen a lady one side of whose face was very handsome and the other side very much deformed in consequence of this mode of treatment. In wounds of the eyelids, unless the tarsus be divided, adhesive plasters will answer the purpose. We should be extremely careful to avoid puncturing the tunica adnata; the stitch should only go thro. the skin of the eyelids, because if the thread were to come in contact with the globe of the eye, it would continuedly irritate it and bring on inflammation of the whole eye. I have seen a case where a knife had entered the eye just at the edge of the sclerotica and penetrated to the chrystalline lens. I have seen another case where the eye of a young lady was punctured by a piece of glass: From whatever cause the eye may be wounded, we should endeavour to remove all irritating substances and by well timed bleeding, purging, low diet, blisters, scarrifications &c. with the use of collyria, we may prevent

suppuration. The best collyrium, is an infusion of the pith of the Sassafras (Laurus Sassafras) in water, or milk and water; the patient should be kept in a dark room. If blindness occur, it is sometimes in the Surgeons power to remedy it by an opperation. Of this, however, I shall say more here after. (See Cat's Museum).

Generally in wounds of the lips, unattended with a loss of substance, it will be sufficient to bring the divided edges together with adhesive plaister, but if a portion of the lip be lost, it is necessary to use Suture.

In wounds of the tongue which we sometimes find to occur from people biting, or receiving a blow on the chin when the tongue is protruded; it is necessary to use the interrupted suture. As it is difficult to get at a wound of the tongue, the patient shutting his mouth with pain, it is necessary to place a soft stick of wood between the teeth to prevent getting bit: the tongue if necessary may be drawn out by a hook. Wounds of the tongue generally heal in about six days: the patient should be fed with spoon victuals.

In wounds of the Ears a simple suture is sufficient.

Wounds of the throat mostly occur to people intending to commit Suicide. When the skin only is divided there is

no difficulty in curing it; but sometimes the trachea is divided and the large vessels exposed; the first thing to be done is to attend to the hemorrhage and secure all the bleeding vessels, either arteries or veins: even if the carotids be divided they may be secured by ligature, as the circulation may go on to the head by the vertebrals artery. When the hemorrhage is stopped, the sides of the wound may be approximated; this can readily be done, if small, by adhesive plasters alone; but if these are not sufficient, we may use sutures; having caution to include the skin and cellular membrane only; for if a stitch was taken in the Pharynx, it might create vomiting by its irritation; and if a stitch was taken in the side of the trachea, it would occasion a continual ~~exciting~~ coughing. When this is done, the head should be inclined forward, to favour the union of the divided edges, and be secured in that position by a bandage. I believe, in every case, it would be most proper not to draw the edges of the parts too close together, so that the blood and matter, if collected may be discharged. All the vessels both arteries and veins should be secured, altho. apparently done bleeding, for if any blood be left oozing from the orifices, it may escape into the larynx and cause suffocation. — In wounds of the throat a great deal of inconvenience results from swallowing, as every such

× Op doubtful in spots

attempt must separate the sides of the wound: to remedy this, it has been advised to introduce a pipe thro. the nostrils into the throat, for the purpose of conveying food to the stomach but this causes too much irritation to be practicable, as it keeps the patient continually coughing or sneezing. He should be supported by nourishing injections, thrown up frequently by the anus. If cough occur it must be relieved by demulcents.

Wounds of the Abdomen.

If they are superficial, they should not be differently from wounds in any other part of the body; but if they be through the parieties, there will be danger of peritoneal inflammation to prevent this it will always be desirable to unite it by the first intention. If the intestines protrude, after cleaning them, they should be returned, and the wound closed by the interrupted suture. In the suture of the abdomen, two needles should be used to each ligature; and the stitches should be commenced internally, at the distance of about three fourths of an inch from the divided edges and the stitches to be about half an inch apart. The patient should be kept to a rigorous diet, and the bowels freely opened by mild purgatives.

When union shall have taken place between the divided edges, the sutures may be removed, and adhesive plaster used.

* She tried the experiment in a dog, in which it succeeded. We are not absolutely certain that he would try it in the human subject.

If any of the viscera are wounded, they should be first secured before we stitch up the wound of the parieties. The chief danger arising from wounds of the any of the hollow viscera, is the escape of their contents into the cavity of the peritoneum. Generally in wounds of the abdomen a piece of omentum protrudes at the orrifice; and if the intestines be wounded, faces frequently pass out, and the patient will have bloody stools.

If the Stomach be wounded, food will be discharged thro. the orrifice, vomiting of blood will be induced, together with cold sweats, and a tendency to faint; and when it proves fatal, the patient dies about the third day, after remaining a till death.

When the intestines are wounded, they may be stitched, four of which will be found sufficient; the knot may be tied so as to be on the inside of the intestine: when this is done cut off the ends of the thread and return the intestine. The thread will get into the cavity of the intestine & pass off by stool. It was formerly the custom to bring the ends of the ligature out of the wound in the abdomen, in every case where the intestines were stitched, untill Dr. Cooper proved that the remaining part of the thread, if cut close and left in the belly will get into the cavity of the intestines and pass off by stool.*

Transverse incisions of the intestines are easier healed than

longitudinal ones; and it costs much more pains and difficulty to close a longitudinal, than a transverse one, since the diameter of the intestine is lessened by the former, causeing a lodgment of the faeces at that place. If the longitudinal wounds be not too ~~long~~ extensive, that portion of the intestine may be removed and the transverse ends brot together. The practice has been tried and succeeded, when three inches of the intestine had been cut out.

The patient should be fed sparingly so as not to distend the intestines: his food should be almost altogether Spoon victuals. Laudanum should be given to allay the pain and keep the intestines still, so that their peristaltic may not present an inverse. Glysters should not be administered, lest, probably a part may escape by the wound.

Even the Stomach may be stitched when wounded. I have known an instance in which it was done; the patient recovered.

When the Omentum is wounded, generally some hemorrhagy takes place; the bleeding vessel may be taken up with the tenaculum, and secured by ligature, and the omentum stitched: but the ends of the thread must be left out of the wound in both cases. Sometimes the bowels are injured and do not protrude. It has been a question of dispute, whether the wound in the parietes should be dilated to search for the injured parts or not.

Sometimes it is right to search for them by enlargeing the wound in a degree, if it be not large enough already; but the wound should not be enlarged freely, lest we induce great inflammation; but there cases in which the intestines have been wounded, where nothing has been done; in such cases where the intestine is wounded, it commonly unites to the peritonaeum, round the wound of the parietes by the adhesive inflammation. It would seem when the intestines are wounded, they stop their peristaltic motion, so as not to prevent their adhesion. When the bowels are injured, and the wound cannot be discovered, if the orifice be large enough for the intestines to protrude, it should be stitched up. If inflammation supervene, copious bleeding, purging, lowdieth &c are necessary. And sometimes tho. the circulation seem weak, yet the inflammation may prevail to a considerable extent.

In wounds of the liver, if the right lobe be injured, the pain is felt in the right shoulder; if the left lobe, the pain will be felt in the left shoulder: it is of a dull heavy kind. If the wound be small, it will in general heal soon; but if it be large, there is, in general, a considerable hemorrhagy, and sometimes inflammation is produced in the peritonaeum by the accumulation and distention of blood in the abdomen. In those cases little can be done; the patient should

use evacuant, and live on barly water and the like.

If the gallbladder wounded, its contents escape into the cavity of the abdomen, causeing, by its stimulus, violent inflammation. It always proves fatal. I believe the same happens from wounds of the pancreatic ducts.

When the Kidneys are wounded, the patient will pass bloody urine; and if it pass into the cavity of the abdomen, it produces death: tho. the back part of the Kidney may be wounded, and the wound heal without any inconvenience.

Wounds of the Bladder mostly prove fatal when they communicate with the cavity of the peritonaeum; but when wounded below that cavity, they are attended by no bad consequences.

In wounds of the joints, if we are not careful to guard against them, inflammation and suppuration occur: they should be treated with adhesive plasters. Mr. Hey says sutures are not necessary: if you use them, be careful that they do not get into the joint, or else the irritation of the thread will cause inflamation of the whole joint. I saw a case where a turner cut his knee with a chisel; the wound was oblique, penetrating thro. the capsular ligament: it was closed with adhesive plasters; a long splint was applied reaching from the ischium to the ancle, to keep the leg extended: no unpleasant symptoms came on, and the

patient, in about a week was well. I have seen wounds of the joints, where the bone has been injured, and yet the wound got well by this mode of treatment. Mr. Home says we should always try to effect a union by the first intention. Wounds of the joint should, likewise, always be treated with the limb extended. The bad effects of an opposite mode of treatment, where the sides are prevented from coming together by lint, may be seen in the following case. A patient who had received a wound in the knee; was treated in this manner, and in consequence afflicted with fever, delirium, itching, convulsions &c. So that he could not sleep unless two persons sat by him and held the limb knee. Abscesses formed under the capsular ligaments, both, above and below the joint. Every time when the dressings were taken away, a considerable quantity of matter, together with the Synovia of the joint was discharged, and great inflammation of the joint had taken place. This at first was a clean incised wound: after this an oedima came on, but this was cured by mercurial purges. This case however got well after four months. Besides common dressing in wounds of the joints we use a splint for the purpose of keeping the limb extended this prevents the usual symptoms that occur without this precaution such as delirium

twitching &c together with the inflamation of the divided surfaces caused by the edges rubbing against each other, It should be applied so as to prevent all motion of the joints as a very slight motion of it does much injury — The situation of the limb where we expect anchilosis, or where we wish it to take place, will vary according to the limb affected — If it be the elbow the arm should be kept moderately flexed, for if union of the bones take place when the arm is strait, the patient will have no use of the limb; so that it will be very inconvenient but if the elbow be somewhat bent the patient can perform many useful motions — But if the knee joint be affected & the limb flexed when union takes place the patient will not be able to walk so that the leg in affections of the knee joint should always be kept extended as it will be most useful in that position — The limb being brought in that position the wound should be dressed with adhesive plaster and secured by a splint & roller — The patient should be bled and

put upon a antiphlogistic regemen, purge and if necessary, a blister may be applied = wounds often heal easily under this treatment tho' their first appearance is very unfavourable

The cartilages covering the end of the bones form joints are sometimes cut through and yet unite by the first intention. from observation I have been led to conclude that inflamation of joints does not so soon take place as inflamation from same cause would in any other part of the body the irritation caus=-sing only an increase of former action and a much greater secretion of synovia in large lacerated wounds of the joints such as surgeons call compound luxations, where they must supp=purate it has been disputed whether the limb should be amputated or not; if it be not done there is sometimes danger of mortifi=cation from the violence of the inflamation; and if the patient escape this by being much reduced he is in danger of tetanus, and if he escape this suppuration and hectic fever and consequent amputation - At best

the limb must anchylose and be rendered stiff ever after; or if anchyloses be prevented, the cartileges will be removed, and nothing but a ligature will connect the bones together, — rendering it perfectly useless; if attempts are to be made to save it, the best application is a bread and milk — poultice. There is more danger of these symptoms occurring in warm weather, and in persons accustomed to drink spirituous liquors; there is more danger also if the patient be old, than if young. Partial stiffness of the joint, is owing to adhesions forming between the capsular ligament and the joint, or end of the bone. But there are cases where the joint cannot return to its natural state, and must anchylose. Before a joint can become anchylose, the cartileges must be removed, as they never unite together. I will show you in what manner this takes place; it never inflames, suppurates, becomes carious, or sloughs off; but is removed by absorption
The absorbent granulations are then thrown out from each end of the bone, and uniting together, render the joint anchylose, forming but one bone. To favour this process, we should keep the joint still; for if the uniting parts be torn asunder, they will not readily reunite. —
Authors, tho. without being able to assign a reason for it

have advised to saw off the ends of the bones; this removes the cartileges out of the way without giving time for them to be removed by absorption. But this is a bad practice, because it occasions great pain and is done with difficulty, and danger of wounding the surrounding soft parts. I believe scraping off the cartilege from the ends of the bones with a knife, when the constitution cannot bear the irritation long enough for the absorption to remove it, will answer very well, and often better. A Splint should always be used to keep the limb perfectly at rest.

Wounds of the Nerves & Tendons.

When a nerve is partially divided, it is said to produce great pains, twichings, convulsions &c. and this was said to be the case when these symptoms followed phlebotomy but it cannot be dependent upon this, for no Surgical opperation can be performed in any parth of the body without wounding a number of the small branches of nerves and yet these symptoms seldom occur. The inflammation and swelling of the arm sometimes occuring after phlebotomy, I shall account for in a different manner. I mention this to guard you against a very terrible opperation proposed by Mr. Bell; which is to mark a complete

division of the soft parts at that place down to the bone.— When weakness is felt in the arm immediately after bleeding, and the suppuration be attended with pain; and if the inflammation be come worse for two or three days instead of better, there we may suppose a nerve or tendon is injured, and an incision may be carried a little deeper and the nerve divided completely: but I am happy to say that such cases do seldom occur. Perhaps the best symptoms of a wounded nerve are, a numbness and partial paralysis of the arm below to which the nerve goes.

Wounds of the tendons are no worse than wounds of other parts, unless punctures of the fascia. These are sometimes attended with inflammation of the parts beneath them, which are bound down and compressed, and suppuration ensues, when inflammation is an attendant upon wounds of the fascia of the thigh of the head &c. A blister should be applied over the injured part, and if this be not sufficient to relieve the inflammation, and matter be collected underneath; a full incision should be made to give vent to the matter.— Sometimes the tendons are cut quite thro.: they require no no different mode of treatment from other wounds.

The limb should be secured in the best position, the edges of the wound brot. together with adhesive plaster. When the tendo achilles is wounded, which often happens, the toes & foot should be extended. This may be done in two ways. 1st. by fastening a roller to the foot and carrying it over the heel over the back part of the leg, and securing it to the thigh; or, 2d. by a piece of pasteboard placed on the fore-part of the leg, and secured by a roller. Care should be taken, however, in all cases of wounds just above the heel, not to make too great extension, but just sufficient to bring the divided edges in contact: for by extending the toes too much, we throw the skin into wrinkles, and bring into contact with the divided surfaces, and prevent their union. This sometimes will happen, from a contraction of a part even with a moderate extention of the foot, turning in the edges of the wound so that it cannot heal. This we sometimes find after keeping it for one or two weeks without any symptom of healing: the skin should be turned out and be kept so by the interrupted suture.

When the Tendo achilles is divided the foot should not be used for 6 weeks.

Wounds of the Veins

The inflammation and swelling consequent upon

Phlebotomy, is best treated of by Mr Hunter, in a peper upon inflammation of the veins, published in the first volume of the Medical and Physical Transactions, which I shall read to you.

When the symptoms before mentioned occurce, it was supposed that a nerve or tendon was wounded and that the person was a bad operator. It has been proposed by Mr Bell under such circumstances, to divide the soft parts first above the wound, by a transverse incision, to a considerable depth, so that the nerve might be divided; but this should never be done. tho' it alleviates the pain, and patients have got well after such treatment. It should not be done because it subjects the patient to much greater dangers and the alleviation of pain is owing only to the taking off the inflamatory tension of the part by dividing it—

Sutures. I promised in our last lecture to give you a description of sutures at our next I shall therefore proceed with that subject.

The kinds of sutures which I prefer are the interupted and twisted and first of the interupted They are nothing more than a simple stitch made by means of a needle passed from

one side of the incision to the other thro' the edges of the wounds, this done draw the edges into contact and tie a knot, this however should not be directly over the wound but a little to one side and the suture is completed —

Twisted Sutures are effected by means of a silver wire encased in a steel point which can be taken off and on at pleasure, this is to be passed thro' the edges of the wounds from one side to the other which being done draw off the steel case that it may not hurt the patient by its sharp point, and the wire remains behind, through the edges of the wounds then take a ligature and wind it round the wire in the shape of the figure 8 always decussating in the centre and drawing the edges of the wound in close contact, when the wound has united sufficiently to take off the threads, draw the wire out gently, and the thread will come away —

Gun Shot Wounds

These were considered in the early periods as being a distinct species of wounds — The livid colour which ensued accompanied with a

black slough vesication and gangrene, caused them
suppose the effect must have resulted from either
poison or from the part being burned, (because pro-
-bably from fire and poison being so little known)
and the accred substance which they applied to
them frequently caused gangrene and large slough-
but these wounds are now considered as so many
varieties of contused wounds — If the body occa-
-sioning the wounds be of a roundish figure, the
wound is undoubtedly a contused one — When
the ball goes with great velocity it occasions
the death of the divided parts — The greater the
velocity projected body the greater is the injury
done to the part — for sometimes the ball passes
thro' part, and that surface at which it passes
out always heals first and with less slough,
sometimes uniting by the first intention without
the formation of any slough — The dead parts
formed into a crust or slough, should be extra-
-cted with <u>great care</u> to prevent hemorhage,
we should therefore watch when its about to
slough off, which is generally about the 10th
day — Some persons might think necessary to

extract the slough when it became somewhat loose; but all violence should, however, be avoided, if the vessels divided be large, for fear of hemorrhage, which often occurs, when the parts slough (in cases of gun shot wounds) even when no hemorrhage had taken place at the time of the accident, owing to the vessels being killed by the violence of the contusion, which portion of them come away when parts slough, with other dead matter. It has been advised to bleed freely in all cases of gun shot wounds But I could not in all cases recommend bleeding at first. If the ball move with a small degree of velocity violence it does not destroy the divided parts, and therefore those cases heal sooner where the force of the ball is weak, than those where the force of the ball partakes of a greater degree of velocity force, because the parts are obby torn. Gun shot wounds require the same method of treatment as other lacerated wounds. When the ball is lodged in the trachea, the patient performs respiration with difficulty. In such cases the ball should be immediately extracted to preserve the life of the patient. Gun shot wounds of the scalp are treated in the same manner, generally as other wounds of that part. It is necessary in some affections of the scalp to lay it open by incision, for the purpose of

examining the state of the cranium. When the cranium is laid bear with a ball, the exposed part, if violently contused should be removed, as the contusion might occasion an abscess within the cranium. These occurrances do not differ from other wounds. I believe they have nothing peculiar to them. A gunsmith becoming weary of life, had determined to put an end to his existance while his fellow mates were gone to dinner. In order to accomplish his design, he loaded a pistol and applied it to the back part of his ear; supposing the contents would have gone thro his head. In this, however, he was disappointed, for the ball did not enter the scull, but took off his whole ear and surrounding parts so as to expose the bone. He was however able to walk to the Hospital and relate the whole circumstance. He complained of a great pain in the head. The opening was delayed - he was siezed with a delirium, inflammation of the duramater came on and he died. Some Surgeons advise the trephine in all cases of gunshot wounds affecting the cranium; but I would recommend it only in those cases where symptoms of inflammation of the duramater supervene. The patient feels most easy when the ball is extracted. When the more fleshy parts are wounded, if the ball be deep seated

and the orrifice sufficiently large for the introduction of a finger, it is preferred to a probe for the discovery of the situation of the ball; because, first, the probe would not convey that accurate sensation which we derive from the finger, as to the situation of the ball and state of the part. 2d. The probe would be much more liable to irritate and injure the part than the finger. If the ball be superficial the wound may be dilated, and it taken out: but if deep seated we should not dilate the part nor use the probe. Indeed the obliquee course which the ball frequently takes, renders it impracticable to dilate the wound Long probes are improper for reasons just mentioned. I know a case of a wound in the ancle where the ball had just made its escape up the leg, and was found lodged above the knee, the skin having prevented its escape. Likewise of a wound in the cheek, and the ball found half way round the body. The best application to the part is flaxseed or bread and milk poultice. All stimulating substances, should be carefully avoided. The treatment should vary according to circumstances. Sometimes the patient is very much depressed and weak this should be relieved by anodynes. If the extremities are cold Bark wine &c may be used.

Sinapisms to them are sometimes useful. We commonly bleed in cases of gunshot wounds, but not always, as too speedy a removal of inflammation, sometimes produces tetanus. We should not bleed indiscriminately, in all cases but wait till fever and inflammation come on, and if they are proportionate to the wound, they are salutary, for both fever and inflammation, in gun shot wounds are necessary to health. I have seen a case where inflammation was done away altogether by copious bleeding, the consequence was that tetanus ensued, and the patient died. When suppuration has taken place, we may use the bark with invigorating; if neither fever nor inflammation come on, we may continue them, but if these occur, we must have recourse to the antiphlogistic regimen. In gunshot wounds we must treat them according to the nature of the case or injury done. If the bone be fractured, we must treat them like comanon fractures, or such fractures occuring from other causes. It is necessary in all cases of wounds of the Thorax to bleed, as they are always accompanied with more or less inflammation. I have taken 286 oz. in 16 days, and the patient recovered; blisters applied, are sometimes of service. If the spine be wounded it occasions a paralisis of all the [illegible]

the parts which receive their nerves below the injury. If it be the cervical marrow, above the phrenic nerve, it occasions a paralisis of all the Diaphragm And the patient immediatily dies. If it occur below that nerve, the patient may have life for several days: but most common ly dies in about four or five days.

Wounds of the Abdomen, are injurious according to the viscra injured, In wounds of the liver, I would recommend copious bleeding. If the gall bladder be wounded, the patient is affected with great depression, and the bile makes its escape out of the orrifice, and into the cavity of the abdomen, violent inflamation ensues and the patient dies.

Wounds of the Stomach are mostly fatal. The patient is afflicted with depression; a disagreable sensation, nausea, and vomiting of blood. A patient who had been drinking a hearty draught of porter recived a wound in the Stomach, which was situated equally distant from the Sternum and the ribs; the porter in part came out of the orrifice; and part was effused in the belly, which was puffed up in the hypogastric region; the patient complained of great pain and finally died. The edges of the wound in the stomach in the stomach, united by the first intention, and no sign

of inflammation of the stomach appeared. I believe he would have survived, the injury done to the stomach and other parts if inflammation of the peritonaeum had not taken place in consequence of the contents of the stomach being in part effused into its cavity.

Wounds of the bladder prove frequently fatal; I believe not owing to any delicacy of that viscus, but to the urine passing into the cavity of the peritoneum, and causing inflammation there, for we often see the neck of the bladder divided without any bad consequences. In all cases rest is a necessary part of the cure; the patient should keep very still, his food should be mild and opening: blisters should be applied to the abdomen; fomenting poultices may be applied with oneup to the belly: and the wound should be closed by an interrupted suture, when situated in the abdomen. When a bullet passes thro. a joint it is to injure the ends of the bones composing the joint. where this is the case, there is a great deal of danger.

If hectic fever supervenes, amputation becomes necessary; but frequently the wound partakes of the nature of lacerated wounds; and sometimes unites by the first intention. When amputation becomes necessary, I would recommend it to be done immediately; 1st. because

by this means hectic fever does not come on; the 2d inflammation, delirium, frequent pulse, cold sweats &c. 2d because the patient is more willing to submit to the operation, if performed immediately.

Lecture 7th

Ulcers I have said sufficient in my former lectures to give an idea of the definition of ulcers they are a very frequent occurence in the practice of medicine. It behoves those who attend at the hospitals to pay the greatest attention to the appearances and the best method of cure of ulcers since a knowledge of their appearances and treatment constitute a principal part of the practice

There are <u>two methods of cure</u>

1st by nature and 2d by the assistance of art

As to the causes of ulcers they are of very little or no consequence to the surgeon; the <u>manner of treatment</u> being the only thing necessary to attend to.

To the healing of ulcers there are but three impediments. 1st Whatever injures the constitution 2d Oedema and 3d improper dressings

I shall begin with an ulcer in the leal=thy constitution and shall confine my observations chiefly to the ulcers of the legs. In the healing of an ulcer the first process is the detumescence of the edges ne=xt granulations appear. raising the surface to a level with the contiguous parts. The gra=nulations appear first in little red points & spots and are covered with coagulable lymph. The pus is secreted about the consistence of cream all healthy ones are of a red colour or of a blueish white. By the subsidency of the inflamation the sides of the sore are brought nearer together. Another good effect is the ten=dency the granulations have to unite with each other. This power of contraction dimin=shes the surfaces of the sore and consequen=tly lessens the extent of the disease. This power of contraction is very fully exemplified in glandular parts as in the extirpation

of scirrhous breasts; the skin which is thrown into folds, resembles nothing more than the consequence of contraction. I have seen it thrown in to folds, resembling the mouth of a purse by a drawing string. The next occurrence after the granulated part, are brot. to a level with the old skin, is the production of a newskin. The granulations adhere to the edges of the sore from which is commenced the new skin, of a whitish colour, on which the cuticle is formed at the same time, and the new skin is continued over the sore. This new production is large, and in old ulcers is not confined to one place alone, but is found in many parts, constituting small places or spots on the surface of the sore like little islands.

For the Treatment we may apply dry lint to the sore, which will absorb the pus and keep it from becoming dry and irritating. Soft dressings which may be spread with a little cerate, or not, should be applied over it and continued with a roller, which should be slightly or loosely wrapped. else the lint will be too much pressed into the granulations: under this treatment they will soon heal up, forming a cicatrix. Mr Baynton has advised to approximate the edges with adhesive plaster, which will very much expedite the cure. If the ulcer happen in any capillary part it is necessary to shave the part before we apply the adhesive

plaster. Care should be taken to apply them so as not to cover the whole surface of the sore, as we should by that means prevent the evacuation of pus. The parts contiguous should be prepid every day to evacuate the collected matter pus. If the dressings stick they may be wet with a little cold water previously to the time of dressing; by which, also the heat and inflammation of the sore are alleviated.

The process of granulation is assisted by drawing the old skin over the sore; this not only lessens the extent of the sore, but supersedes the necessity for the formation of much new substance, which is always is more tender than that originally formed. It sometimes happens that the sides of the ulcers will not unite when approximated. They should then be washed with spirits, or they may be touched with a little blue vitriol, lunar caustic or any other escharotic caustic: Powdered rhubarb has been found useful. If these remedies fail, the surface of the sore, if small, should be exposed to the air, to dry and form a crust under which a new skin will often form; and when the crust comes away the sore will be healed. It sometimes happens that the flow of the pus is so great as to prevent the adhesion of the sides so that they cannot close up. An astringent wash will entirely obviate this; for this purpose, I used a wash of Vit. alb. ℥ Sach. Sat. in a patient of mine

which immediately stopped it; adhesive inflammation came on, and the patient got well in a few days. In healthy constitutions, ulceration seldom demands the aid of a surgeon; the blood vessels are more firm and vigorous, and capable of carrying on a healthy action in the extreme vessels; greater action must necessarily take place in vessels of the lower parts of the body than in those of the upper parts, to support the impending column of blood, and to counteract the effect of gravity: Hence the vessels of the newly formed granulations, being weaker than those originally formed, are unable to support the column of blood when we walk or stand erect; and this is the reason why in ulcers of the leg, the blood sometimes bursts the vessels of the leg. In others, thou the vessels do not give way, yet the parts are too weak to carry on the circulation, and the sore becomes of a livid colour, owing to the stagnation of the blood. —

By a rupture of the vessels, the inflammation is increased, and the sore discharges a bloody serum. In this state of weakness the part may be stimulated with camphorated spirits or even alcohol. If the vessels become varicose, use a roller. When a rupture of the vessels takes place, a bloody serum or mucous is thrown out, which acts as an irritant to the new and tender granulations; inflammation comes on, and the secretion of good pus is diminished. If this discharge is

not soon put a stop to, the granulations slough off, the symptoms return, and the sore is enlarged. The best cure is a horizontal position. The patient should be confined on his back in bed, and be kept perfectly at rest; When this cannot be accomplished a bandage should be applied; which is the best cure in ulcers of the legs: it prevents an over distention of the vessels.

Bandages are of three kinds, 1st. the laced stocking, strips of leather or of muslin or linnen spread with adhesive plaster; the cotton are preferable. A laced stocking would answer every purpose, but it is too difficult to obtain. The use of a bandage is when we walk to prevent the vessels being over stretched by the return of the blood.

The second impediment to the cure of ulcers is oedema This is preceed by adhesive inflammation, which forms the basis for the granulations by uniting the cells of the cellulosa; the watery part of the blood is thrown out into the cells of the celular membrane; destending the sides of the sore, and putting the vessels on the stretch, but being rendered more compact by the adhesive inflammation, cannot give way to the distending force which presses against the granulations, and if the distention be long kept up they will be apt to slough off. Oedema generally subsides at at eight, and the injury done during the day, is then repaired.

In this way it will often continue for some time, while the edema continues destroying by day what is renewed by night. In the cure, rest, and a horizontal posture are necessary; if this is not sufficient, a roller must be applied. Some authors advise the patient to take a degree of exercise after the application of the bandage. It is certain the parts will heal speedily sometimes under this treatment; but I believe much sooner, if the patient is kept in quietude.

The situation is a matter of great consequence. The bandage should be applied in the morning before the patient rises, and consequently before the leg swells.

The third impediment is that method of treatment which some Surgions call "dressing to the bottom". It is by pressing lint or other substances to the bottom of the wound; this is a very hurtful practice as it must rend the uniting parts, and keep them asunder, and consequently prevent their healing union. All such dressings act precisely in the same manner as a pea in an issue. I might next enumerate different powders & salves &c, but it is unnecessary. I may just mention, however, that all stimulating salves are improper: they either bring on inflammation, or, by their acrid qualities

act as corrosives. By the removal of those unnecessary dressings, we put the sore in a state of healing. This way of dressing to the bottom was the antient mode of treating fistula in ano. Whatever impairs the constitution, independent of specific diseases, is an impediment to the cure of ulcers. The use of spirituous liquors acts in this way, as we see ulcers in people who are frequently into excess, very difficult to heal.

Hot or cold weather retards the cure of ulcers. Fevers are hurtful, tho' febrile actions sometimes cure ulcers: I have seen ulceration as large as the palm of the hand, after resisting other treatment for 6 months, cured by a fever in 3 days. The simple strength of the constitution has been supposed to have an effect in the cure of ulcers: observation proves the truth of this in general, as the parts are able to go thro' their suppuration better, tho' I think I have seen them heal equally well in both constitutions.

I shall speak now of the different kinds of old ulcers and under the following heads. 1. Of inflamed ulcers. These are known by their pain, soreness, and swelled edges; and are accompanied with an increase of heat; the pus changes, or, instead of pus, they discharge some thin serum, and other matter which has a

purulent appearance; and coagulates over the surface of the sore, adhearing slightly to the granulations.

Treatment. If there be such inflammation present, bloodletting, purging &c. are necessary. Bread and milk poultices are the best applications to the parts, and the patient should be kept in bed. When the patient is too weak to admit of evacuations, and the ulcer is situated on the leg, the foot may be raised to favour the return of blood; this acts as a local depletion, and without depriving the patient of blood.

I have seen this accellerate the cure immediately. When the inflammation has subsided, it may be considered and and treated as an ulcer in a sound part.

2. Fungous Ulcers. These have large granulations with sound tops, which are above the surface of the other parts, and have no disposition to heal, or form skin, and sometimes have great sensibility, and bleed from the slightest touch: in others, they have little or no sensibility.

Treatment. These may be treated with a simple compress and secured by a roller, which presses the granulations together, and prevents the growth of fungus. If this is not found sufficient, the excrescence may be destroyed by lunar caustic; astringents sometimes answer the same purpose.

3d. Edematous Ulcers.

In these there is an extravasation of serum into the cells of the cellular membrane. The granulations become of a purple colour. If the patient's strength be much reduced, evacuations will be improper. The edema can frequently be brot. down by strips of adhesive plaster, and raising the leg to a horizontal posture. If this does not answer, it may be remedied by means of a roller which should be wound from the extremety upwards.

4th. Sloughing Ulcers.

In these the sloughing frequently arises from a weakness in the granulations. In some old ulcers when the granulations have arisen to a level with the sound skin they become of a black colour, mortification comes on and the parts slough. Sometimes mortification does not stop even at the edges of the sore, but goes on sloughing at one part while the skin forms at another. In general, the mortification takes place over the whole surface of the sore.

This is generally attended with febrile symptoms but if the granulations die thro. weakness, they should be dressed with a poultice combined with <u>Cam.</u> <u>annum</u>. The part is generally very sensible to the

Ulceration sometimes comes upon both legs at once; one breaking out while the other heals.

This proves that it does not depend upon weakness of the constitution, or both sores would be affected alike. In those cases from weakness, we should use bark, opium, nourishing diet &c. When the mortification has stopped. Carrots grated and boiled in milk may be applied to correct the foetor. The fermenting poultice mixed with powdered charcoal may be applied. Sometimes while the mortification is going on extensively, maggots may be formed especially in warm weather) in the dead parts. To obviate this, the dead parts are to be washed over with the nitric or muriatic acid diluted in an equal quantity of water. After the slough has separated, employ the common treatment.

I shall now speak of ulcers that occur not unfrequently in weak constitutions. They generally look well at first: the granulations form rapidly, and generally rise to a level with the true skin. But our hopes are soon frustrated, for the granulations in a short time change their appearance, and become of a purple colour; and a part of them are removed by ulceration. The patient should have a nourishing diet and take the Peruvian bark. Cold water may be poured over the sore for 4 or 5 minutes every day.

A weak solution put upon lunar caustic, put upon lint and applied has proved useful. Citron ointment has also been of service. Lint dipped in a solution of oakgalls to which cardamom has been added, applied to the sore, has sometimes cured ulcers that have resisted all other remedies.

5th Indolent Ulcers.

Where nature has been protracted frequently in her attempts to form a cure, the parts become indolent, have no disposition to form a cicatrix; and when the inflammation is reduced, the edges remain in a callous tumefied ring state, in consequence of the coagulable lymph not being absorbed when the inflammation is removed.

Treatment. The best plan of treatment is to remove the callous edges, after the inflammation has subsided, and so change the disposition of the ulcer, to the same nature of a sore from accident. This may be done either by the knife or by caustic; or it may be done in another way, viz. by means of bandages and pressure. Mr. Bayntun says the adhesive plaster will mostly answer. Where the caustic is employed, we should persevere in the use of it to the middle of the sore (and sometimes over the whole surface) until the ulcer puts on a healthy aspect; taking care after it begins to heal not to apply it near the edges; or be-

shall by that means, destroy the edges granulations, and prevent the cure, making the ulcer larger.

Under this head I shall speak of the application of mercury.

Mercury is sometimes very useful in the cure of sores — given in small doses. But if this is found insufficient, we should increase the dose sufficiently to create a gentle ptyalism The tincture of myrrh is sometimes used; or we may apply a solution of lunar caustic to the part; or it may be sprinkled with red precipitate, dressed with Unguentum citrinum &c.

6. Carious Ulcers.

Here the dead part of the bone become a stimulus to the absorbents to separate the dead portion bone. I do not pretend to enter into a discussion of the causes that produce exfoliation of the bones. ..... But I may observe that as soon as any portion of bone becomes loose, it ought to be immediately removed, if possible; but when the bone is situated in the more fleshy parts, it is difficult to determine whether it is loose or not; especially if the piece be large. It may, however, be discovered by the introduction of a probe. If the bone be tight no pain will be felt on pressure with a probe; but if the bone be loose, great pain will be felt on pressure, or only slightly touching; in consequence of the dead part being pushed upon the and tender sensible granulations: if blood follow, we may

believe the dead portion to be loose. If the bone be loose, in order to extract it, it will be frequently necessary to make an incision down to it for the extraction of the loose portion. A sponge tent however, often answers to dilate the orrifice very effectually. This should never be delayed when practicable to remove it for granulations to take place, forming a substance nearly of the consistance of bone, which increasing the dead part, prevents its removal. Sometimes the exfoliated piece is too large to admit of an incision being made sufficiently large for its removal; because if we divide the vessels in so hard and callous a part, it will be very difficult to take it up. To avoid this danger, it is better to brake the bone by a pair of strong nippers, after which the pieces can be readily extracted. In a case of carious ulcer of the lower jaw, which irritated the masseter muscle to contract so that the mouth was kept closed, cartilage was formed in the same manner; so that the jaws could not be opened, occasioned by the carious bone. The Surgeon not understanding the cause, sent the patient to the city to have it dissected; supposing an adhesion of the parts had taken place.

7th. The Varicous Ulcer.

These are caused by varicous veins, and very much resemble ulcers of the indolent kind. The vena saphena most

generally become varicose, and prevent the ulcer from healing. They may be often remedied by a tight bandage or a laced stocking; but this is necessary to be continued so long, that the patient is tempted to leave them off too soon, before the cure is completed. This may be superseded by an opperation, performed by tying a ligature round the vein, so as to take off the column of blood.

This practice was revived of late years by Mr. Hunter, and afterwards by Mr. Home. I shall read you the treatment proposed by Mr. Home. In performing the opperation, he recommends the patient to stand on a table, on which is placed a chair, and lean over the back of it: in this way the veins will be completely distended with blood, and the leam will be at a convenient height for the Surgeon. But in this situation it is difficult to get the light to fall on the part; and the patient not knowing the degree of pain attendant on it, is mostly restless and discontented: I therefore apply a tourniquet on the thigh, so as to compress the veins without affecting the arteries; by which means they become distended, and the opperation can be easily performed.

The vein may be tied up in the leam: In order to do this, the Surgeon must pinch up the skin on one sid of the vein, and an apistant on the other; the skin so raised is to be divided over the vein with a scalpel, which will sufficiently

expose the veins. A silver needle with a blunt point, is to be armed with a ligature and passed round the vein, and the patient placed in a horrizontal position before the vein is tied, to free it from all the blood. I apply a small piece of linnen rag over the vein, directly under the knot formed by the ligature; so that when the sides of the veins have united, the ligature may be cut away without injuring the vein. In common the ligature may be cut away about the fifth day. The ligature will generally come away about the ninth or twelfth day. But it is not necessary it should remain so long. After the ligature is ~~removed~~ secured, the edges of the wound may be brot. together by adhesive plaster, and a pledget of lint applied so as to press on the lint above and below the ligature.

If the Vena Saphena be divided, both branches of it must be secured. Sometimes both trunks of the saphena are affected and require to be tied; but it will not be necessary to tie both when one only is affected.

8th. The eighth species of ulcer are caused by local or constitutional circumstances, and continued by a peculiar diseased action; as in venereal ulcers, cancerous — scrofulous &c.

These may be remedied in 2 ways. The first which are entirely local, may be cured by cutting the diseased

part out with the knife: but if one speck is left after the opperation, as in venereal buboes, cancers &c. the parts spread like a ringworm, and require the frequent use of caustic.—
2d: When the continuation of the ulcer depends on any constitutional injury, that injury must be removed before the ulcer can be cured.

Lecture 8th.

On Fractures.

A fracture is a complete solution of ~~contiguity~~ continuity of a bone, occasioned mostly by external violence; but this however, is not always the case, because the patella is sometimes fractured in consequence of muscular contraction alone; and the humerus is sometimes fractured in the same way.

Bones are said to be more brittle in frosty weather, because slight falls in cold weather produce fractures, and therefore, more easily broken in cold than in warm weather: but another circumstance, the contraction of the muscles easily contributes to this end; for instance, when we pass over ice, the muscles contract with vehemence, and a sudden slip or fall, occasioning them to act with greater force or

violence, frequently produces a fracture. This is proven by intoxicated persons, who seldom break any of their bones in slipping or falling; which is owing to a greater relaxation of their muscles. If a bone be broken obliquely it occasions great pain, on account of the sharp edges of the fractured extremities, piercing the soft part, and causing convulsive action of the muscles: and when cured, the limb is frequently shorter than the other, owing to one point of the bone passing over the other. The limb readily admits of flexion of the injured part, and is often distorted.

Fractures are either simple or compound. A simple fracture is when the bone only is broken, without any external communication.

A compound fracture is when there is a division of the surrounding parts, so as to admit of external communication with the cavity of the fracture, if the external communication be small it frequently heals by the first intention, similar to a simple fracture, and has been termed a compound simple fracture.

Simple Fracture. In the treatment of simple fractures of the extremeties, the limb should be placed in a state of relaxation, and the ends of the bones brot. into their

exact position. In general the convulsive action above mentioned, ceases when the limb is reduced; this, ingeneral, is easily effected; but when it cannot be accomplished by the ordinary means, the patient may be bled ad deliquium animi. If inflammation supervene, it should be reduced by bleeding and the antiphlogistic regimen. As purging is very inconvenient it should be employed just sufficient to keep the bowels open. The limb should be kept in its position by means of splints and bandages. Splints are firm substances; and are of four different kinds; wood, leather, whalebone, pasteboard; of these, the last is preferable, because they can be moulded to any figure, by wetting it in hot water, and adapting it to the part, and when it becomes dry it maintains its figure. We are very often not called to the accident till several days after it happened, and a considerable degree of inflammation and swelling have taken place. This should be removed before we attempt the reduction of the limb; by bleeding, low diet, and the application of lead water poultices; as union does not take place when much inflamation is present. I may venture to propose this as a general rule, that at the end of 8. or 10 days after the first dressing we should always examine the part. If any displacement has

taken place, and an alteration be necessary, you may make as much as you please. The patient should be kept to a low diet, and submit to evacuations by venesection, in proportion to the inflammatory symptoms. If the patients constitution be unhealthy or weak, it may not be necessary to evacuate at all. The dressings, or splint, should be loosely applied, or else, if the limb swell, the circulation may be stopped, and so produce mortification. The time necessary for healing the fracture depends upon the age, constitution, and place of fracturing, likewise upon the size and situation of the bone. The bones of young people heal sooner than those of old. Fractures of the jaw or ribs heal sooner than those of the fibula. The bone in some constitutions does not unite heal at all firmly, but forms a kind of joint, and in fact the ends of the bones are sometimes tipped with cartilage, and have a sort of capsular ligament. Two cases of fractured legs of this kind were cured in this hospital, by moving the broken limbs so that the extremeties of the bone might rub against each other; this was effected by causeing the patient to support himself on crutches, and moving about to bear as much weight as possible, on the injured limb; which irritation seems to cause the procup necessary for the formation of bone, to be put into action. This procup very much accelerates the union. The adhesive

inflammation is produced, coagulating lymph is thrown out which soon becoming vascular, then cartilaginous, and lastly forms bone itself. Mr. Hunter says, when the bones will not unite we should make an incision down to the bone, but does not tell us of his ever having such a case. It has been recommended to make an incision down to the bone, in such cases, and amputate the ends of the fractured ends; in the same manner as recommended in wounds of the joints: but this is a very dubious, painful, and terrifying opperation, and cannot be performed in all cases, as in fractures of the leg or fore arm. I would rather advise to pass a seton between the fractured ends of the bone, which is a much simpler method, attended with much less pain, less inflammation, and can readily be performed in any situation. I have performed the opperation in this manner with very good succes: It was done by passing a needle armed with a skain of silk between the divided ends of the bone; this, by irritating the part, caused suppuration and inflammation with granulations; and in 12 weeks time the patient complained of much more pain in bending the arm at that place: These granulations soon united, leaving only the small hole of the seton, which healed in a few days after it was removed. In old people it should be kept in for a long time, for it appears to me that the soft

parts around the bone, begin to form bone first.

Simple fractures mostly unite by the first intention. Union of bone requires more time than the union of fleshy parts. The coagulable lymph first becoming vascular, then cartilaginous and then bone. In this way the substance called callous, is formed, which being of larger diameter, forms a tumor round the bone at that place; but it generally diminishes, becoming less and less till it differs but little from the bone itself. At the first, the granulations are full of vessels. If the wound be simply inflamed, union by the first intention fails, suppuration and granulations supervene, and the granulations when examined are found to be vascular only at the extreme point; the other parts being of the nature of bones. —

Compound Fractures.

The first bond of union is lost in compound fractures, as the blood which effects that union escapes thro. the external orifice. Compound fractures sometimes partake of the nature of simple incision; but much oftener, however, they are punctured, lacerated, or contused, the fractured ends of the bones being so blunt as to tear the soft parts; again, the soft parts are very much bruised, and the bone broken into several pieces, by the mechanical force applied, as when it has been run over by a waggon, or any heavy body falling on it. —

Fractures may be transverse, oblique, longitudinal, or spiral. Compound fractures are attended, sometimes, with profuse hemorrhage. When much blood issues from the wound, we should apply a tourniquet on the principle artery. When the blood is thus stopped, we should next determine whether the limb can be saved or not: If it be so torn and mangled, that the circulation cannot goon to the extremety, amputation must take place. It may be done immediately or you may wait till the soft parts slough, and then amputate the bone. If amputation be necessary I would prefer it immediately, as we sometimes by that means prevent tetanus, and likewise the patient is generally more willing, at that time to submit to it. In amputation, sometimes, considerable hemorrhag takes place from the medullary vessels.— Dr Gooch mentions a case in which the stream of blood flowing from the medullary artery in the tibia was equal in size to a crows quill; and as it run in a bony canal in the tibia, he proposed to make two perforations near the end of the bone with a small trephine, which was agreed to, and the artery by this means laid bear, and secured by perpendicular prepsure. But I have found in amputations of the medullary arteries, the column of blood effectually stopped by a cedar plug thrust in beside the artery so as to prep the orrifice completely together, and left so for 8 or 10.

days, until a union of the sides had taken place. If bleeding take place from any part of a compound fracture in the leg, & cannot be stopped by other means, the femoral artery must be taken up. When the inflammation is great, it demands our attention, for if it be suffered to run on to the suppurative stage, the patient will be greatly weakened by the discharge of matter: his constitution becomes much emaciated, and hectic fever comes on. When the discharge is very copious, and hectic fever has taken place amputation is advisable.

Lecture 9th

Fractures. In compound fractures we should endeavour to remove the splintered portions of bone (when they can be discovered) if it can be readily accomplished; but if the pieces are attached so as to occasion much pain in extracting them, we must omit it till the process of exfoliation has completely taken place.

If it sometimes happens that the external communication is very small, so that the blood coagulates in the orifice, completely stopping it up, and renders the cavity perfect, so that the bone unites as in a simple fracture. But if through too much officiousness, with a view to assist nature, the Surgeon should be very careful to wash out the coagulum, the

fracture would be rendered a compound one, and go thro' the processes of suppuration and granulating. If the external orrifice be very small, a portion of dry lint may be bound on it; which will become wet with the blood, then dry and form a scale. After the bones are reduced, when the ends are not splintered, the edges of the wounds should be brot, into contact and secured by means of adhesive plaster. I had a case of compound fracture of the tibia, where the ends of the bone had made their way thro' the contiguous parts, the incision was an inch and a half in length, notwithstanding it united as a simple fracture and the patient got well in about 5 weeks. If the inflamation run too high it may terminate in mortification. To prevent this occurence from inflamation we should bleed and apply bread and milk poultices— The bleeding should be practised as it is indicated. Some Surgeons are fearful of large evacuations at first on account of the copious discharge that takes place fearing they shall reduce the patients system too much, not reccolecting that the inflamation which precedes it is the cause

of the discharge of matter. But is necessary to distinguish between mortification caused by inflamation & that which proceeds from weakness. If it be occasioned by weakness, opium, barks, wine &c. should be administered. If mortification be brot on by inflammation in compound fractures apply a blister. It will here be necessary to distinguish between that mortification which is produced by the parts being killed in consequence of the violence applied, and that which is the effect of inflammation, induced by the violence; as the parts in the first, having lost their life, must necessarily slough.

Bones cannot bear a great deal of inflammation without losing their life.

Of particular bones. and first of the Bones of the nose. These bones, tho' not so frequently as others, are, nevertheless, sometimes frequently broken. Sometimes the fragments are pushed into the nose, which occasions a difficulty of breathing. When in this manner, they may be reduced by introducing an armed spatula, or something of the kind into the nostril; and when reduced it may be retained in its place by a gum elastic catheter if necessary. If they project outwards they may be retained in place by applying a compress; or after they

are reduced, they may be kept so by means of leather straps spread with adhesive plaster. If the soft parts are injured apply a bread and milk poultice.

Of the lower jaw. Fractures of the lower jaw sometimes occur at the sympisis; but most commonly at the side and at one side only; tho sometimes they happen in both at once. They occur most commonly between the chin and procepes. The coronoid procepes are seldom ever broken, because they are so well defended by muscles; and I never saw but one fracture of the condile. We can easy tell when it is broken, tho' the fragments be ever so little displaced; by rubbing the finger along the bone it will occasion pain and the patient cannot prep the jaw against the other.

When the fragments are displaced, if we look into the mouth the rows of teeth are uneven. When the fracture is on both sides, the digastric muscle will draw down the sympisis, while the temporal muscles draw the angular parts upwards.

Treatment.

Some Surgeons advise pieces of pasteboard to be applied on the jaw to keep it in its place. But the upper jaw acts as a splint to which the lower one may be fitted & fastened by a roller. Apply the teeth directly together having the rows exactly over eachother & confining the jaws

roller: that which is mostly advised, is one with four heads, applying the body of the roller over the anterious and under part of the chin; then drawing two heads upwards directly over the top of the head, and the other two heads from the anterious part round the occiput and forehead alternately. I prefer a simple roller it will answer every purpose. The patient should be kept upon spoon food and forbidden all speaking and should not move his jaw for several days. The Dressing should be continued for about the space of three weeks by which time union will take place. Not unfrequently the teeth are loose and under this circumstance authors have advised to extract them this should however on no account be done for fear of making a compound fracture.

Compound fractures of the lower jaw are mostly accompanied with the death of the ends of the bone

Bones of the Spine.

When the processes of the spine are injured, the consequences to be apprehended are not serious.

When the spine is wounded there is always an —

extravasation of blood from the vessels of that place, which extravasation presses upon the spinal marrow. Some have advised to make an inscision down to the bone to discharge the effusion: but as it is very uncertain whether it be posterior or anterior to the spine, and if the latter, it cannot be of any use, I should not advise it. When the injury takes place in the neck above the third vertebra, which it most commonly does, the patient shortly dies, about the third day. A paralysis of the lower limbs comes on, & likewise of the bladder, so that the patient cannot void urine nor scarcely faces, and breaths with difficulty. As it is only the diaphragme which carries on respiration, it is dangerous to lay the patient on his face for any length of time, as thereby the pressure on the abdomen, would force the abdominal viscera upwards, and prevent the descent of the diaphragme. If the injury happen low or down, the patient may survive a longer length of time. But I never knew a case of this kind from which any one recovered. The patient is compelled to lie on his back, and the parts on which he lies, mortify. When injuries of this kind occur in the neck, distention has sometimes proved serviceable: Tho this is almost always of no use, yet for the satisfaction of the friends of the patient, we may put it to

trial. To effect this we may should pass two bandages round the head; one from under the chin over the top of the head; the other from the occiput round the forehead, and secure them together. An instrument is then formed (fig. 1. in the plate) being eyea valed when it rests on the shoulders, and having a screw at the top, and a hole in the piece directly under the screw, to admit the ends of the bandages. In this manner the extention is made against the shoulders (previously having put a pad upon each) by stretching the bandages, in consequence of turning the screw above. Another method is by tying the feet to the foot of the bed, and the head to the head of the same, and thus apply extention; having a hole in the bed opposite the arms for a convenience.

The patient at the hospital appeared to die in consequence of mucous collected in the trachea and obstructing respiration, owing to the weakness of the of the expiring force.

Lecture 10th.

Bones of the Pelvis.

The bones of the pelvis are very seldom fractured, owing to their great strength; tho' I once saw the dorsum split thro. The patient cannot stand up, suffers great pain; convey-ing a sensation as if he should fall to pieces. Upon motion of the parts, a crepitus may be perceived.

Treatment. All that is necessary to be done, is to confine the patient to one position (and that the most easy) and to pass a roller round the pelvis, according to the nature of the case.

Fractured Ribs.

The ribs are seldom fractured individually; sometimes four or five are fractured at once. The most common cause of the fractures of the ribs, are falls, or substances falling on us. I have seen many from the falling of masses of dirt.

Fractures of the ribs are commonly attended with great pain, when the patient takes a large inspiration. A hacking cough is mostly a concomitant symptome. By applying the hand on the side when the patient coughs, the crepitus may readily be perceived; and if the lung be wounded, the patient expectorates a bloody mucous, and air passes into the cavity of the thorax. This, when it takes place only in

a small degree, is of no consequence. There will be a small irregularity or angle at the place of fracture. If you press on the angle, it is of an irregular shape, and gives a crackling noise; sometimes a swelling of the body takes place, called emphysema: it is occasioned by the air passing from the lung into the cavity of the pleura; which at every expiration issues into the cellular substance, and sometimes makes its way over the whole body. When the emphysema is partial, a cloth wet with brandy may be applied to the emphysematous part, and confined by a roller. Dr. Hunter has published an account of the treatment of such cases, in the 2d. vol. of the London Medical Observations, which I would advise you to read.

It sometimes becomes necessary to make a puncture into the cavity of the pleura to discharge the air. When this is done it should be made between two sound ribs, midway between the sternum and spine; or else we may let the air to the fracture, and convert it into a compound one; for tho' it is already, in reality a compound fracture; yet it frequently happens that the wound in the lungs, is so small, that the bone unites like a simple fracture.

The air in the cellular texture may be let out by punctures, if it become necessary, tho' it never produces inflammation

are observed when treating of wounds. In the treatment of fractured ribs, a wide bandage should be passed round the thorax, so as entirely to prevent the motion of the ribs. If great inflammation supervene, treat it as peripneumony. Wide bandages should be passed round the thorax to prevent their slipping down. For the cough which often remains sometimes, the patient may take a spermaceti mixture, or a solution of gum Arabic in water, combined with laudanum. Sometimes small doses of liquid laudanum are very serviceable. In about three weeks, union will have taken place between the fractured ends of the ribs.

Of Fractures of the Upper Extremities.

And first of the clavicle. The clavicle is most frequently fractured about the middle, and it generally slopes from the scapula inward and downward. When it is broken in the middle, a displacement of the scapulas fragment takes place, downward and forward, with seldom any displacement of the sternal part, the former most commonly being below the latter, the weight of the arm causes the first, and the pectoral muscle the latter. With respect to the length of the bone, its shortness may be attributed to the action of the pectoral muscle.

If the clavicle be broken within the ligament, it

its connection with the coracoid process, it cannot be displaced, and is frequently overlooked by the surgeon. This circumstance should be well remembered, for by being overlooked, the little motion it is allowed, may prevent it healing, and produce an abscess, and thereby cause a compound fracture.

But if it be broken in the middle, the crepitus may be easily felt upon causing a motion of the arm. A patient with a fractured clavicle cannot raise his arm; and likewise the shoulder on the side affected will be much lower than on the sound side.

Treatment. The treatment of fractures has been greatly improved by Mr. Despault. Formerly they used in cases of fractured clavicle, to set the patient on a stool, and cause an assistant standing behind him to place his knee between the patients shoulders, and take hold of the shoulders with his hands to pull them back for the purpose of meeting extention distention; compresses were then often applied under the arm, and a bandage was passed round over the shoulder, and under that of the other, in form of the figure 8, and the patients hand supported in a sling. But in this mode of treatment there is nothing to prevent the pectoral muscle from drawing the scapular fragment under the sternal one. I believe this is the present treatment

in England, and which I have frequently seen tried there, but with very little advantage. This practice is, in short however, of no service, and attended with one very serious inconvenience, viz. extension of the axilla. I shall now speak of Desaults method. To prevent the scapular part from paping below the sternal one, a pledjit (pad) should be applied under the arm and secured by a roller. This roller should be paped several times round the body to prevent its slipping. The pad enables the arm to act as a lever to the clavicle, and effectually prevents one fragment from slipping under the other. The pad may be of muslin or flannel, the latter is prefered, or of horse hair, wool &c. Another bandage is to be applied round the body and over the arm, drawing the elbow close to the body to keep up the extension of the clavicle, it may have one or two turns round the wrist to support the weight of the forearm; or a strip may be paped round the wrist and pinned, to the other bandage to support its weight: a piece of soft linnen or flannel should be placed between the wrist and body. The weight of the arm should be supported next, for this purpon an apistant should take hold of the elbow and push the arm upwards, this done, a bandage is to be paped round in form of a figure 8. beginning as follows; lay one end on the breast, pap over the fractured bone under

the elbow, and over the same bone again; then a cross the back under the opposite axilla, a cross the breast, and so over the fractured bone again, pursueing the same course as before. We should then feel the pulse to see if the circulation goes properly on. The bandages should be continued about 4 weeks, by which time the union will have taken place; tho' I would advise to continue them one week after this, as the union would consequently be very weak.

Lecture 11th

Of the Scapula.

The symptoms of a fractured scapula are a drop-ing of the shoulder, pain, and a crepitus. The acromion process is sometimes fractured, tho' not often; but whenever this takes place, it is to be treated exactly after the same manner of fracture of the clavicle. It may be repla-ced by pushing the arms upwards, the forearm may be bent on the humerus, and the bandage passed as before mentioned The dressings should be continued about 6 weeks. I have never but once seen any other part of the scapula fractured, and that was nearly at its inferior angle, and fractured transversly from the base to the inferior coste; and when the scapula moved, the lower fragment remained still. When fractures of this

part of the scapula occur, and when the lower angle is broken off it is drawn a little downwards and forwards by the action of the serratus major anticus muscle, and cannot be pushed upwards while the scapula is drawn upwards by the trapezius major; to remedy this the hand should be brot forwards to the other shoulder, which draws the scapula round so that the broken edge may be brot in contact with the fragment. Bandages should be pass'd round the arm and shoulder, to secure the motion of the arm and keep it in this position, and so prevent its moving the scapula.

Fractures of the Os Humeri.

This bone is most frequently broken about the middle: When fractures happen about this place, there is no difficulty in ascertaining their situation. The patient cannot raise his arm nor use it in any degree; it likewise bends in any direction, and if extension be made, the crepitus may readily be heard and felt. An assistant should take hold of the condiles, bending the elbow, and drawing it a little way from the body, to put the muscles in a state of greater relaxation: another assistant should take hold round the patient under the axilla to make a counter extension; or take hold of the opposite arm. The surgeon should take hold of

the arm, and place the ends of the bone in contact; this being done, a roller should be applied round the arm from the ~~elbow~~ hand to the shoulder (the length of the splints): it should be pretty tight making a moderate pressure, tho' not so tight as to stop the circulation. Three splints are sufficient to keep the fragments in their proper situation. These should be of pasteboard. The splints are to be secured by another bandage. The fore arm now remains to be supported, this is done by a sling, or by passing a broad roller round the body, having previously made a compress or pad, to apply under the arm, for the purpose of making the ~~side~~ level for the support of the arm. The bandage for the support of the fore arm, begins at the opposite side, passing under the hand over the elbow round the body, and thus pursuing the same course again - At the end of ten days, we should examine the limb; the union at this time will be so soft, that if any displacement shall have taken place, it may easily be remedied. By the end of four weeks, we may omit the bandages gradually. If the fore arm swell much, we may wrap the bandages from the ends of the fingers. This is, however, seldom requisite.

Sometimes the os humeri is fractured near its head the patient complains of pain upon every motion of the arm

pressing the arm against the side causes pain. The lower fragment, in most cases, is inward towards the thorax. I never saw a case where it was either before or behind. If it be inward, the elbow stands off from the body; if outwards, the elbow bends in towards the body. When the lower fragment is in towards the thorax, a pad should be applied close upon the axilla between the arm and the side, to keep the bone in its right situation.

Fractures near the head of the os humeri have been taken sometimes for luxations; and by trying to reduce the supposed luxation, much mischief has been done, by irritating the wound and surrounding soft parts, so as sometimes to induce suppuration.

This mischief may readily be avoided, by placing the fingers in the axilla when we shall be enabled to feel the fragments instead of the round head of the bone. Sometimes, when the lower fragment keeps its situation, and the patient cannot use his arm, we are enabled to tell the precise place of solution; but by extension and counter extension being made, the crepitus may be felt on bending the arm. It is of great consequence to ascertain whether the humerus be luxated or fractured; for if the latter, and the lower piece inward the patient cannot rotate his arm.

when it is healed in this situation.

Treatment. In fractures at the head of the bone begin the bandage at the wrist, and wind it to the shoulder, after the extension and counter extension have been made. The splints should then be applied; two of these will be sufficient if they be broad; but three if they are narrow, applying one before, one on the upper side, and another behind part of the arm. These are to be secured by a roller. The lower fragment is to be kept out by a pad, which is best made of a piece of flannel folded up and placed under the arm; this pad answers instead of a splint. This being done, the arm is to be bent at the elbow and secured by a broad roller. I prefer a roller to a sling, as a sling admits of too much motion.

In about 4 weeks, the bone will have united, tho' we should examine it in about 10 days, by which time the ecchymosis which frequently appears in consequence of the blood vessels being injured by the broken fragments, will have completely subsided, and we are the better enabled to judge of its proper situation. I once saw a case where there was so much ecchymosis that I could not feel the bones at all.

Mr. Desault advises, where the effusion is great to make a free incision down to the fractured cavity, and discharge the fluid. But this renders it a compound fracture, which

should not be done. The natural process of absorption will mostly remove it: if however, at the end of three or four months, it be not absorbed, a small puncture may be made into the cavity to discharge the fluid. By this time the bones will have united, & we shall avoid changing the fracture into a compound one. As soon as this opperation is done, the edges of the puncture should be brot into contact by adhesive plaster, so that the wound may unite by the first intention. The humerus is also, sometimes fractured transverse ly near the condyles; and sometimes longitudinally also, at the same time, so as to separate them. When the condyls are fractured in this way, by taking one fragment in each hand and moving them backward and forward, we easily perceive the crepitus: If only one be fractured we can discover it in the same way; besides this, the parts are so thinly covered that the fracture may be readily felt. —

I have already said that when the elbow joint is concerned in the injury, it is right to keep the arm flexed. The fore arm should be rendered incapable of motion, and after the fragments are placed right, a bandage should be wrapped round the elbow, beginning about the middle of the fore arm, and extending up to the middle of the fore arm. To fit the fore arm, of the shape of an L, (fig. 27) each forming right

angles; should be applied one over the internal condyle, and the other over the external one: these two more bent splints are to be applied, one anterior, the other posterior.— These splints are to be secured by bandages. The splints that extend along the forearm, should reach to the wrists. Every motion of the forearm displaces the fragments, and must be prevented by a bandage round the body and arm. At the end of 10 days we should take off the dressings and examine the limb: at the end of 10 days more we should take off the dressings again, and the arm gently flexed.— after the 20th the dressings should be taken off daily and the arm flexed to prevent stiffness of the joint. —

Fractures of the Olecranon.

These are mostly caused by falls on the elbow, and are always transverse. When the olecranon is fractured the patient is not able to extend the fore arm, because the triceps muscle which extends the arm is inserted into the detached fragment. The upper fragment is drawn a little upwards from its place, by the contraction of the muscle, and you may move it from side to side.

Treatment. The forearm must be extended, and the process being placed in its situation, is to be secured by bandages.

№ 11.

beginning at the wrist and winding to the shoulder. When the bandages has got near the ~~wrist~~ elbow the Surgeon must feel if any portion of the skin be got between the divided ends of bone, the bandage is then to be continued on. A splint should then be applied on the anterior part of the arm to prevent flexion. After ten days we may examine the state of the fracture, and after the twentieth day, we should remove the dressings daily and gently flex the arm in order to prevent stiffness of the joint, which sometimes happens. — The dressings should be continued about fifteen days after, till perfect union takes place.

Of the fore arm.

The bones of the fore arm are frequently fractured, and the ~~bones of the~~ radius much oftener than the ulna. the ulna being seldom broken alone. The radius is most commonly fractured at the wrist, when the ulna is not broken with it: no difference here, can be seen in the length of the radius. All the difference that can be seen, will be an angular projection at the fore part of the wrist. The fracture is commonly so low as to be taken for a luxation. The Surgeon will put the arm in a sling, and union will take place forming an ugly projection, and the patient cant rotate

the arm as usual. We may distinguish between fracture and luxation by the crepitus attending the former; but besides the crepitus (which cannot in all cases be felt) we may know by the tubercle at the lower end of the radius not being opposite to the styloid process of the ulna as usual. It sometimes happens, however, that both are broken in the same place: Whenever this is the case, the patient cannot flex his arm, the crepitus may be felt, the arm bends at the place of fracture; and there will be a lateral depression, caused by the bones being brot. nearer together.

Treatment. To bring the divided surfaces into place an assistant shall take hold of the elbow, another of the hand, and make the necessary extension. While the extension is making, the Surgeon may replace the ends of the bones without any difficulty, by taking hold of the arm and squeezing the flesh in between the bones, so as to press them out; the interosseous ligament will prevent their being pressed too far out. This being done a bandage is to be applied, beginning at the wrist and extending it up to the elbow; care being taken not to move the ends of the bones. Two splints should then be applied, which should be wider than the arm, and should be of firm materials; pasteboard without being wet an

Sheets

very well. The splints should be covered with soft linen, and extend to the ends of the fingers. The splint on the back part of the forearm, should be applied with the upper end below the elbow, or else the patient will pinch him self whenever the arm is extended. A roller is to be passed round the splints, and the forearm supported by a bandage, having care to keep the thumb uppermost, or else the patient will not be able to rotate the hand as usual if it be suffered to heal in another position. At the end of about 4 weeks union will have taken place.

The metacarpal bones are sometimes fractured; the extension can be made by pulling the fingers. two splints are sufficient, one on the fore part and the other on the back part of the hand, secured by a roller.

The Phalanges are sometimes fractured; they are easily replaced, and secured by 4 small splints, placed one at each side, one on the back, and one on the fore part of the finger, and a roller passed round them.

Lecture 12th.

Of the os Femoris

Fractures of the femur occur most frequently about the middle or rather below it, sometimes above, sometimes at the trochanter, and in some instances at the neck. If it is fractured at the middle, and the fracture is obligue, it will be considerably shortened, the fragments of one portion passing over those of the other, in consequence of the contraction of the muscles. The patient cannot move his leg, complains of pain in his thigh, it bends at that place, and upon motion the crepitus is discovered, besides this the limb will be distorted, the toes turning outwards, and when one end of the bone passes over the other, it will occasion a lump with some tension at that place. The lower fragment is mostly under the upper one.

The manner in which fractures of these bones have been treated is very various. I shall at present shew the method which is most commonly now in use.

The extension and counter extension being made by assistants, the bone is replaced by the surgeon, and short stumps of muslin or linen plaid under thigh, are brot, over,

and made to decussate eachother at the top: a Splint is then applied at the posteriour part, and another at the anteriour part of the thigh: these splints are thin pieces of ~~leather~~ cedar spread on leather, and are secured by pieces of tape tied round. one at the upper and one at the lower end.

Two bundles of straw are then applied, one on the inside which is shorter, and another on the outside, and secured by tape. To prevent the foot from turning out, a bandage is joined to the inner bundle, passed round the foot and joined to the outer one. This, is, now, I believe, the mode of treatment in London; it is, however, inconvenient.

Mr. Pott supposed that the shortness of the limb which frequently occurred, was owing to the muscles being in a state of tension, when the limb was straightened out, therefore changed the position, ordering the patient to lie on the injured side, and have the thigh drawn upwards towards the body and the knee bent; and thereby place the muscles in a state of relaxation, but this will not be found to answer, for often the ends of the bone will irritate the muscles causing them to take on contraction involuntarily & displace the bone. Besides, we cannot ascertain the length of the limb, since measuring from the anteriour spinous process of the ilium in this position

is very inconvenient. Again; the posture is very uneasy, and the patient cannot lie on his side so long. To obviate this it has been contrived for the patient to lie on his back, and have his thigh and leg to rest on a machine, somewhat like the roof of a house, so that the muscles might be relaxed. But here every time the bed pan is put under him, the limb will be displaced. To prevent this, the son of Mr. James Earle has contrived a double bed with pulleys to hoist the upper one, which must have a round hole cut thro' the middle or opposite the anus, to let the feces pass thro' into the pan which is to be placed under. The hole is to be filled with a cushion made to fit it. But this is very complicated, and not seldom to be got; it is therefore impracticable.

He has however, made an improvement in the bandages, having them short, in the above described manner: so that the limb may be examined by just opening them at the top without disturbing it.

All these modes are now found to be inconvenient for securing a fractured femur. The body naturally descends on the lower extremities when treated in this manner, as the patient lies in bed.

Mr. Desault has greatly improved the dressings of fractured thighs, by the invention of the long splint.

I now shew you Dupuytrs treatment. The bed should be made of firm boards covered with a mattress, and the patient should have but one pillow under his head, to prevent his slipping downwards: There are several parts of this dressing. 1st. 4 tapestrips, laid, one just above the knee, one just below it, one at the upper part of the thigh, and one at the ancle. 2d. a piece of muslin or linen to wrap the splints in; this should be wider at the outside (as fig.) having the acute angle at the outer & upper side. 3d. Strip bandages long enough to reach round the thigh, laid with the edges in contact or so as to lap a little on eachother, placed so as to reach from the perinæum to the knee. 4th. A silk handkerchief laid so as to come under the perinæum, and across the pelvis, to make the counter extension. The patient may thus be laid upon them on his back.

5th. A short splint of the length of the thigh, to be placed on the anterior part side of it. 6th. A small piece of leather spread with adhesive plaster, and laid on the perinæum, the hair previously being shaved off to prevent any excoriations from the counter extending handkerchief. 7th. Another handkerchief to be pass'd round under the heel, and decussated at the top

of the foot, boot below it and tied to make the extension the same caution is here requisite here as on the perineum. 8th A short splint to go on the inside of the thigh, and a long one at the out side, for making the extension. The extension and counter extension being made, and the bones placed in their right situation, the short bandages are to be wrapped. The long splint / leg. / now rolled up in the linen placed for that purpose, is to be applied to keep up the extension. The excavated larger and goes under the axilla; the holes are next to receive the counterextending handkerchief for securing it; the hole at the other end of the extending one, after passing over the block which we see in viewing the block edgwise, which is designed for keeping the foot straight, and having the extension directly under the foot in a straight line. The other short splints are to be rolled in the same manner, to reach from the perineum, to the sole of the foot. Notwithstanding the splints are wrapped in linen, there will be when they are applied, some bare cavities which are to be filled up with bandages of chaff. These are to be laid between the splints and the leg, to fit nicely the unevennesses of the leg, to keep it steady and easy. Chaff is preferred because it can be removed from one end to the other easily. The short splint is now to be laid on the anterior part of the thigh. It should be of pasteboard,

and should fit the thigh. The four pieces of tape are now tied round the thigh and splint. In order to keep them still firmer, a large bandage is passed over the long splint and round the body two or three times, which prevents any motion. In this way extension and counter extension are kept up, and the patient having many points to rest upon, by lying on his back, rests much easier than in any other posture. We should now examine the ~~posture~~ length of the limbs; if the fractured one be too short, increase the extension & when the bandages get slack, they should be tightened. The fractured ends of the bone should not be drawn so as to become in contact at first, when there is violent contraction of the muscles, it will cause great excoriation. But by keeping a moderate extension for a few days, the muscles yield to the force and are easily overcome.

Lecture 13th.

The splint now generally in use for keeping up the extension, is not that originally proposed by Mr Desjauts, but is considerably altered in its form. The one originally invented by him, came only to the upper part of the spine of the ilium, and extended a small way below the foot. The inconvenience resulting from the transverse position of the counter extending stay, which almost always pressed the upper fragment outwards, wanted remedying: I therefore lengthened the splint so as to reach up to the axilla shoulder; by this means the plan for securing the counter extending force, could be brot to a straight line with the limb, and by placing a pad to the part in contact with the axilla, a portion of the counter extending force might be supported and thereby prevent the getting of the perinæum. This is particularly useful in women whose urine is very apt to get under the dressings, and excoriate the parts. When excoriations take place, they may be washed with a little brandy; this I have found an excellent remedy.

Sometimes fractures happen at the end of the femur; this may take place near the trochanter, or near the round head of the bone; or the head itself may be fractured within the ligament.

The patient is often sensible of the crack at the instant it happens, and cannot raise himself from the ground, walk or stand; Tho' Mr. Dupuytr mentions two cases where the patient could walk, the fragment having become so interlocked. The foot turns inwards, seldom or ever outwards, this it is said sometimes to do so. The surgeon can pretty readily extend the limb, if he is called in soon after the accident, but if a considerable time have elapsed, more force will be necessary, and I have sometimes been obliged to bleed ad deliquium animi. The extremities being brot into contact, the crepitus may be perceived.

There is another circumstance by which the extremities of a fracture may be found: Place your fingers on the great trochanter, and then rotate the limb; if the neck of the bone be broken, the rotation will appear to be on the axis of the thigh bone, or as if the bone revolved on a pivot: But if it be broken lower down, the axis will be thrown farther off, and the trochanter will describe a much larger circle. The idea of the thigh bone revolving on a pivot, will be strongest, when the neck is fractured nearest to the trochanter. If the limb be much inflamed, we must decline setting it till the inflammation has abated. The fractures of the neck, I believe heal as soon as any other part of the

bone, unless when they occur within the capsular ligament and I have seen an instance where a fracture of this kind did not unite in eight years. — As we cannot always ascertain exactly, fractures at the upper part of the thigh, it is right in all affections of this kind, to apply Desault apparatus. It would be right to inform the patient of the difficulty of union, when fractures occur within the capsular ligament, or even in any part of the neck of the bone. The dressings should be continued 55, or 60 days, Desault says. I have seen but very few fractures of the neck of the thigh bone; indeed I may say but one. In this case, the apparatus was taken off at the end of these weeks, when the union was consequently very soft. The patient could not walk for near a year: and still limps. This patient was still not old. I think that only a sort of ligament had formed between the divided extremities. In every case, therefore, we should continue the dressings according to Desault. —

Contusions on the buttock are sometimes mistaken for fractures of the neck of the femur; they may commonly be distinguished by the length of the limb being the same. —

Sometimes the femur is fractured lower down than the

middle, occuring just above the condyles, the lower fragment sloping obliquely upwards and backwards. When it is broken in this manner, splints applied on each side are sufficient. Desaults apparatus answers this purpose very completely. A thick compress should be laid under the leg to raise the lower fragment. Sometimes, besides being fractured above, the condiles are likewise separated. Fractures of the thigh bone at this place, are easily ascertained.

The thigh bones at the place, and crepitus are readily felt; the patient cannot bend his leg, & when the condyles are separated, the crepitus may be felt by grasping the condyles with each hand, and rubbing them together. I never but one saw a case of this kind, and this was at the hospital; but in this case, the extremities of the upper fragment, pierced thro the integuments, and made a compound fracture, communicating with the lower joint, and the patient shortly died. Splints on each side are here likewise sufficient necessary.

I shall next shew Dr. Hartshorns method, which is certainly a very ingenious one, and sometimes answers better than Dessaults. The principle object is to make extension and counter extension fall in a strait line with the limb, and thereby avoid any displacement

by the extension ..... application of the apparatus ..
..... another advantage is, preventing the foot from turning outwards. One advantage in particular derived from this mode of dressing is, when the fractured ends form an angle anteriorly, which by this manner of dressing can be kept down completely by a compress. You will perhaps think that a bandage in the usual manner might do: but it will be found insufficient. The chief use of bandages next the thigh is to prevent the action of the muscles, and may likewise give some lateral support.

Lecture 14th

Fractures of the Leg.

These occur most frequently about the middle, and when transverse, accompanied with little or no displacement of the fragments. but if the bones are broken obliquely, the lower fragment passes behind the upper forming an angle anteriorly; the upper end of the lower fragment being drawn back by the contraction of the muscles. The tibia is more commonly fractured than the fibula. They occur sometimes at the upper end near the head, sometimes at the middle, and sometimes just above the ankle. If one bone only is broken, the other keeps it in its proper situation. If it be the tibia by grasping the limb above and below, and trying to bend the leg, the fracture may be ascertained. If it be transverse, no displacement will take place.

I once had a case of this kind, when the patient after having his limb dressed, and being in bed for three days felt so easy as to suppose that I had been mistaken & that the limb had not been broken: the bandages were therefore taken off; & the patient began to walk about

the room: the family also that I had been mistaken,— Being confident of the existance of the fracture, I requested him to let me see him walk; he did so, but the bone presently bent under him and he fell on the floor, and had nearly converted it into a compound fracture. In all cases by grasping above and below the fracture, and moving the limb, the crepitus may be felt. When the fibula is fractured, the crepitus may be felt by moving the foot. —— Treatment. The leg is to be laid on a pillow. After the extension and counter extension are made, and the fractured extremities are brot in contact, a roller may be applied from the ankle to the knee. but as this cannot easily be opened to examine the limb, I prefer the strips. During the application of these, the extension and counter extension should be kept up by assistants; two splints are then to be applied, one on the inside and the other on the outside of the leg, and secured by pieces of tape or strips. The splints should be of pasteboard wet. To support the leg and keep it firm, two narrow boards are to be placed, one on the inside and the other on the outside of the pillow on which the leg rests, and to be secured by tape. —

If it be left in this manner, the foot will fall outward and downward; a bandage pinned to one side and passed round

the foot and secured to the other will prevent this. A cradle or in want of this, a couple of hoops of a flour cask with about one third cut out of each hoop, and crossed in the middle at right angles are to be placed over the limb to support the bed clothes.

When the tibia and fibula are fractured transversely, this method answers very well, but when obliquely, an angle will be formed anteriorly, and the leg will be shortened on account of the contraction of the muscles. In these cases the extension & counter extension invented by Desault has been greatly improved by Dr Hutcheson whose method I now show you. The counter extension is made by two pieces of tape placed on the inside, and two on the outside of the leg; then a roller passed round them below the knee so as to secure them in that situation. This should be drawn tight, or else the limb will be apt to swell in consequence of the superficial veins being pressed. A silk handkerchief which is best should be passed under the heel, brot, on the top of the foot, decussated and carried below and tied to make the extension. Strip bandages are to be placed under the limb; enough to reach from the ancle to the knee. The extension and counter extension are now to be made by assistants, while the Surgeon wraps the bandages

Two splints with holes in this manner (fig.) are next to be placed, one at each side of the leg. These must be long enough to reach from above the knee to below the foot. The tape on each side of the leg, is to be passed thro the two smaller holes at the upper end of the splint and tied while a bar is passed thro a large one beneath the foot, and fastened with wooden pins. The extending handkerchief is tied to the bar, by which means the extension is completely kept up. Two bags of chaff are to be placed between the leg and splints, one on each side, and the leg supported by a pillow.

The greatest inconvenience resulting from this mode of treatment, is the swelling of the leg occasioned by the bandage round the knee: the foot too often swells in consequence of the lymphatics being pressed as well as the veins. This mode of treatment will not do where any considerable swelling or inflammation exists, as it will tend to increase it. This is a good method for compound fractures, as it can easily be opened to examine the limb, and to apply dressings to the wound, and the extension and counter extension can be preserved when the fracture is oblique. In one instance of this kind of treatment, the limb swelled so much that I was obliged

to omit it, and use Desault's apparatus. Sometimes the tibia is fractured near the knee joint. In fractures happening at this place, seldom any displacement occurs, but the joint is very apt to swell, ~~In fractures that pass at this part~~ and become very much enlarged, and is often difficult of cure. I have seen a case of this kind, where all the antiphlogistic remedies had been tried, as bleeding purging, cupping, the application of leeches &c but with no benefit; which was cured simply by extension & counter extension, and the antiphlogistic regimen. —

The patient should be kept in bed a long time, as union does not take place soon. When they happen at the knee, the limb should not be moved for 4 weeks, and the dressings should be continued for 6 weeks, and then moved, but little, and very carefully. When it is fractured at the ankle the same treatment is necessary.

The fibula is usually fractured at the lower part, near the ankle, but if broken by a blow, it may be fractured where the violence is applied. Both the fibula is sometimes broken by an abduction of the foot, and the foot likewise luxated. The reduction of it may be easily accomplished, by grasping the foot and making extension.

For fractures of the fibula the bandages should not be tight, for the same reason as in the forearm. Two splints are to be applied at the sides of the leg, to steady the foot as the cure cannot be accomplished if the foot be allowed to move, because the lower fragment will follow the motion of the foot.

In about 25 days union will be effected.

Of the Patella.

Fractures of the patella are commonly transverse, sometimes they are obligue, and I once saw one longitudinally. The transverse are generally occasioned by a violent extension of the leg, and the obligue by violent external force, as falling on the knee &c. When a fracture of the ~~knee~~ patella takes place, the knee becomes benefited and the upper fragment is drawn upwards by the contraction of the muscles; the lower fragment being fixed cannot move.

The patient cannot walk forward, because he cannot extend his leg; but can go backward, drawing his leg after him. When the leg is extended on the thigh, the upper fragment will sometimes come in contact with the lower one, and the crepitus may be felt. In longitudinal fractures the vacancy can easily be felt, the ligaments are so thin, and crepitus may be perceived on rubing the parts against each other. Treatment. In transverse fractures, bring the upper fragment down as near as you can

to the lower one. The patient is to be laid on bed, and the trunk raised by means of a pillows, so as to relax the extensor muscles of the leg. The leg too is to be elevated in the same way. When the patient is placed in this way, and the fragments are brot. close; apply a bandage from the foot to the knee. An assistant then holds the upper fragment down, while the surgeon passes another bandage from the hip foot to the knee. The fragments being thus brot. together, a compress is to be applied above the upper fragment, and a similar one below the lower one; these compresses are to be secured by a roller passed round the knee, nearly in the form of the figure 8, as follows; beginning above the patella, pass under the popliteal over the tibia just below the patella, under the popleal again, and then over the knee joint above the patella, and so on pursueing the same course again. This is the best mode of dressing. The compresses being secured, pass the bandage over the patella, so as to cover it to prevent the soft part from swelling. In this manner the fractured ends of the bone can be kept in contact together. The bandage wrapped from the foot keeps the part from swelling; while that from the thigh, not only prevents swelling, but counteracts the disposition of the muscles to contract. To prevent flexion of the leg, a splint reaching

from the ischium nearly to the heel, is to be applied nearly on the posterior part of the leg; it should be covered with a flannel, and secured by a roller. If the splint reach below the foot the pressure occasioned on the ~~foot~~ heel may cause ulceration. The leg is to be kept elevated some time. Some Surgeons have been afraid to bring the edges of the patella in contact, fearing the bony matter would be effused into the cavity of the joint, and occasion anchylosis. If the bandages on the upper fragment be too tight, anchylosis will sometimes actually take place. Pressure causes an absorption of the cartileges, and union takes place between the bones, rendering the joint stiff. The bandage should never be applyed tight if much inflammation exist. Union will be a good while taking place (about 8 weeks) When the dressings become soaped, they are to be renewed by the Surgeon. In longitudinal fractures, a compress is to be applyed at each side, and the flexion secured. Sometimes the upper fragment, when no attention is paid, is drawn up three or four inches, and a ligament is formed, uniting the ends of the bones to resist the motion of the leg. Indeed we can seldom ever bring the fractured ends of the bone so close together as to form a bony union.

This ligamentous union, altho it has been supposed

an imperfection in the animal Economy, is a surprising proof of the perfection thereof, for if a bony matter had been thrown out and completely ossified, the knee would have been entirely stiff; whereas, by this ligament being formed, the patient may come to have the perfect use of his limb, by gently exercising it daily. The patient should sit on a table and swing his leg as much as possible. Altho he will acquire strength but slowly, yet by perseverence the muscles will accommodate themselves to the extra length of the tendon, and the patient will be able to walk as well as ever.

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Lecture 15th

Dislocations.

When any bone forming a joint, is forced out of its natural situation, it is said to be luxated. It occasions the patient a good deal of pain, and causes a considerable alteration in the shape of the limb. In general, if the Surgeon is called in soon after the accident, it is easily reduced. The greatest difficulty we have to contend with, is the contraction of the muscles. The ruptured capsular ligaments does not make much resistance, except in certain circumstances. The patient should be restricted to low diet, a warm bath, and mechanical force; and when there is a difficulty of reduction, the patient should be bled, to weaken the contractions of the muscles, thereby we will be able to overcome them more easily. In different cases I have found, where the usual methods fail, that the best method is to bleed ad deliquium animi. This completely destroys all muscular force, and experience has proved it to be the best method. This mode of treatment was first practiced in this country by myself. When the patient refuses this, I have tried the nauseating effects of an emetic in.

just before vomiting, or an injection of an infusion of tobacco or tobacco smoke, has proved successful when other things have failed. Boyer says that intoxication produces the same effect; and I would suppose it might answer the purpose very well. The muscular contraction continues to resist the reduction for about three weeks; after which the muscles become accommodated to their situation; the bone begins to form adhesions, which, with the contraction of the capsule of the joint, causes the difficulty of replacement; so that it is most necessary to bleed ad deliquium animi in cases where luxation has existed more than a month. When we apply force to the reductions of luxations, we should be careful to apply it only to the dislocated joints. The limb should be placed in a relaxed state.

I now speak of particular luxations, and first of the lower jaw.

Luxations of the Lower Jaw.

When these luxations occur, they take place upward and forwards, so that the condyles rest on the tubercle of the temporal bone. Sometimes both condyles are brot forward, and sometimes only one: When one only is displaced, the jaw is turned only to one side; When both are luxated, the mouth stands wide open, in spite of the efforts of the patient to the contrary.

and the patient can not swallow. The same effect takes place when only one condyle is displaced. If you apply your finger at the place of articulation, the cavity may be felt.

Luxations of the jaw occur from yawning, or opening the mouth too wide, sometimes causing a good deal of pain. Some years since, a woman in the market, falling into a great passion, and opening her mouth pretty wide the better to vociferate, luxated both condyles, and to her great mortification, could not close her mouth again; and was brot, two or three days in this predicament, to me, to have them replaced. they were easily reduced.

Treatment. In proceeding to reduce the lower jaw we must take the precaution to wrap up our thumbs very well, to prevent their being injured between the teeth, by the convulsive actions of the muscles, the instant the reduction takes place. They must be placed as far back on the molar teeth as possible: the fingers are to be placed under the chin, then push the jaw downwards and backwards, at the same time squeezing the fingers upwards. If the fingers do not prep the jaw downwards, the reduction will not be so easily if at all, accomplished. I have seen great force applied directly backwards without any effect. Some have advised to give a knock under the chin; this may sometimes

succeed, but it is apt to break off the neck of the coneshyles.

No bandages are necessary after the reduction.

Luxation of the Clavicle.

This may take place either at the sternum, or at the acro=mion procep. - I have never seen it occur at the sternum, tho I have no doubt but that it may readily take place there on account of the superficial articulation, if a considerable force be applied so as to push the shoulder forward and in=ward. When it happens, the patient is unable to raise his arm. Luxations at the scapular end I have seen. - They may be occasioned by the patient being thrown on the shoulder, from a horse, or otherwise, so as to press it downwards. In both cases the treatment is the same as that for fractured clavicle. When the scapular end is dis=located, we must continue the bandages for a considerable time, or else the shoulder will sink down lower than na=tural, and form a tumor on the top of the shoulder.

Luxation of the Os Humeri.

This takes place at the shoulder joint and occurs oftener than any other bone; owing to its great latitude of motion in all directions, allowed by its glenoid cavity. It is commonly luxated downwards towards the axilla; and is mostly occasioned by a fall on the shoulder: tho I have seen it luxated forward and inward

between the pectoral muscles and clavicle; but mostly inside of the coracoid process. It is said to have been luxated backward, this I have never seen. When it is luxated inwards and downwards, a depression can be felt above the humerus, between it and the acromion process. If you put your finger in the axilla, the round head of the humerus may be felt. The patient cannot put his elbow to his side; he cannot rotate his arm, nor raise the forearm to his head, which is mostly somewhat flexed. He commonly has an inclination to rest his arm on something to support it. I have already shown how to discriminate between luxations and fractures of the humerus, which you will do well to remember.

Treatment.— If the Surgeon is called soon, there is there is but little difficulty in replacing the bone, because the muscles do not begin to exert themselves immediately. I have accomplished the reduction, by placing one hand on the acromion process, to make the counter extension, and pulling the arm with the other to make the extension. To apply greater force, it has been advised to apply six a couple of bracles on the arm just above the elbow, by means of a roller; then turn the upper ends of them down. But Mr. Hays method, I think is preferable— When the arm is drawn out by an assistant, and counter extension made by another; place

your hand under the axilla, and push upward, at the same time suddenly push the elbow in towards the side. After you have tried this method, (if with no effect) bleed ad deliquium animi. If the patient be strong, this cannot do any hurt, and if weak there will be no necessity for it. This completely removes muscular action, and the limb can be reduced with ease.

About two years since a man was admitted into the Pennsylvania Hospital with a dislocated humerus; the accident had happened three or four weeks previous, and the parts were so much swelled, that he had to remain about ten days before we could ascertain whether it was luxated or not. After trying all usual methods to no effect, I bled him till he fell on the floor in a fainty fit, when the bone was reduced with great ease. I have since repeated it with the same good success. After a limb has been luxated for more than three weeks or four weeks, the muscles become accommodated to the situation, and begin to form adhesions. The best way to accomplish reduction after adhesions have taken place, is by means of a compound tackle. Take two round towels and secure them at the middle, just above the elbow by means of a roller; turn the upper halves of them down to the lower,

and thro' the ends of them pass the rope of the tackle, to make the extension; the other rope, to secure the tackle, is to be fastened to a firm place. To make the counter extension, a long strap about an inch wide, stuffed with horse hair or cotton, must be applied against the end of the acromion process, and the ends brot. round the body in a contrary direction, and made fast to some fixed place. To prevent the strap slipping off and excoriating the shoulder, a strip of roller may be passed round it by which it may be held in its place.

To secure the thorax, pass a wide strap or belt round the body, securing it with a buckle or otherwise; to this have a rope which may be held by an assistant, to keep the body in its place, as the patient is apt to get.....

Thus fixed, draw the rope to make the extension, and have a care that the counter extension be made against the acromion process, else the arm may be torne from the chest. It is therefore of great service to make the counter extension on the acromion process. In making the extension the arm should be rotated to seppurate the adhesions which have formed. The Surgeon may have a towel under his arm and over his shoulder to draw the arm up, or he may put his arm in the axilla, and push the patients elbow downwards with the other hand, using the humerus as a

lever. The bone has been lodged in the axilla for 6 & for 9 weeks, and been replaced; and indeed a much longer time, for it is possible to displace a bone surrounded by a fine capsular ligament from a natural to an unnatural situation, and it is as possible to bring it from an unnatural to a natural one. But when the bone cannot be reduced, we are not to despair altogether, as a great many useful motions may be performed. I knew a cabinet maker whose arm was dislocated, and yet he was able to follow his trade; and the only motion he could not perform was drawing his arm directly upwards. I shall not pretend to describe all the machines that have been invented for reducing luxations, but only a few of them.

It has been supposed that a staple fixed in the floor over head, and the patient suspended from it by his arm would be productive of good effects: But it would endanger taring the arm from the chest, as no counter extension could be made against the scapula or acromion. Another method is to grasp the arm for the purpose of making extension (the patient lying down), then place the foot in the axilla to make the counter extension, and when you make the extension, pass the arm towards the side, and

a pour foot will thrust the head of the bone into its place. I saw Mr. Hunter do this very successfully. Some advise hanging with the arm over a ladder. But none of these methods are very good.

Lectur 16th.

Luxations of the Fore-arm.

The fore arm is luxated upwards and backwards forming a protuberance behind the arm, and is kept flexed; tho sometimes it is luxated lotterally. The coverings of the part are so thin that the Surgeon can readily ascertain the nature of the case. The patient cannot flex or extend the arm; the coronoid proces of the ulna occupies the cavity naturally filled by the olecranon, & is what prevents the reduction.

Treatment. In order to reduce it, an apistant should take hold just above the elbow, and another below at the wrist, to make the necessary extension. The Surgeon is to take hold just before the elbow, and pull at the same time directly backwards to draw the coronoid proces from off the humerus: when the arm is forcably enough extended by the apistant, bend it towards the body; which will in most instances be suffficient to

completes the reduction. A bandage may then be passed round to secure it.

Luxation of the Wrist.

This takes place forward and backwards; it can be readily reduced by making the proper extension, and pressing the bones at the same time into their place.

Luxations of the Fingers.

These also occurs forward and backwards; extension and bending will in common reduce them.

Luxations of the Thumb.

When the thumb is luxated at the second phalanx, it is the most difficult of reduction of any bone in the body. Extension has been applied so as to tear off the ~~second~~ first phalanx and yet the bone not reduced

Luxation of the Os Femoris.

It was formerly that by some not to occur often on account of the amazing strength of the capsular ligament which was computed to be sufficient to bear 1000 lbs. and from this concluded luxations would not often happen. I have, however, seen more cases of luxations of the thigh at the

No. 2. V. 2.

hip, than ever I saw fractures of the neck, - I believe about 4 luxations, and not more than 3 fractures. It is generally luxated so that the head of the bone gapes backwards, lodging in the dorsum ilei; and next to this downwards and forwards into the foramen ovale; and may be luxated immediately when it is luxated backwards and upwards and upwards, the limb is commonly about 1½ inches shorter than usual. If a bruise has taken place about the pelvis, it may influence the length of the limb, by causing the pelvis to be drawn to one side. In order to ascertain if the pelvis be straight, place a string or slip from one superior anterior spinous procep of the ilium to the other; if it cut the body at right angles, the pelvis is straight; then measure from the anterior procep to the knee to ascertain the length of the limb. It is necessary to know if the ~~limbs~~ pelvis be straight, before we can ascertain the existance of a luxation. If the joint be bruised, the injured limb will be the longest. Where the luxation is upwards and backwards, the toes will be turned inwards, and turning them outwards causes great pain. The patient cannot move the limb, this, when all other symtoms are wanting, is enough to ascertain the existance of a luxation upwards and backwards. It is by no means difficult in ordinary cases

to distinguish between luxation and fracture of the head of the thigh bone. Of this I spoke when treating of fractures. — When the bone is luxated, no crepitus is felt; and when the neck of the bone is fractured, the foot always turns to the out side, & is easily turned inwards; but if it be luxated upwards and backwards, the foot cannot be turned outwards at all, or without causing great pain. When it is luxated downwards and forwards, it is lengthened mostly about an inch, and the foot is turned outwards and turning it inwards causes great pain. The distance between the trochanter major, and the superior anterior spinous process, is greater. When the head of the bone is luxated forward and upward on the Os pubis, it is a little shorter; this is a very rare occurrence; only one case of it is mentioned by Desault, in which case the foot turned outwards. The same kind of treatment, nearly, is required in all cases; that is, extension and counter extension. As the brim of the acetabulum is large, an apparatus to dislodge the head of the bone, and pull it straight from the body, making the extension and counter extension all a right line with the body, is required. On these general principles, luxations of the thigh are to be treated. In luxations of the head of the thigh bone, it is necessary

to use a considerable degree of force for its reduction; and the best method is by compound pullies, when they can be had: But it can readily be effected by the assistance of men; and one advantage is, that they can desist instantly required; but in obstinate cases where much force is necessary, the pullies are generally used.

I shall next give you the method of treatment.

When it is luxated upwards and backwards, the patient is to be laid on his sound side, and the limb bended at the hip and knee, to relax the muscles; a strap, for the purpose of making counter extension, is to be passed under the perineum between the sound and injured thigh (having some soft substances between it and the ~~thigh~~ perineum) and fastened to a fixed point: Next two strong round towels on each side just above the knee, to be secured by a roller, to make extension. When this cannot be fixed above in fat persons, it may be put just below the knee, but it is best to secure the extending power to the luxated bone. A pulley fixed to the towels can make extension with great ease: During the extension, the Surgeon must rotate the bone to detach its head; if this is found impracticable, bleed and deliquium. When the head is luxated into the foramen

ovale, or forward on the os pubis, make the usual extension and counter extension, in a line with the limb; and at the same time make extension and counter extension, at right angles with the thigh bone, outwards, which is absolutely necessary. To effect this, the patient lying on his back on a table, pass a strong towel round between the thighs, close to the perinæum; an assistant is there to get on the table, and take the towel over his shoulders and pull upwards, to make the extension, while his knee is placed on the crista of the ileum, to make the counter extension; meanwhile the Surgeon rotates the limb. If this is found insufficient to draw the head of the bone out of its situation; fix a pulley to the towel, and pass a strong bandage round the crista, and fasten to a staple for making the counter extension. This method succeeded last winter. When the head of the bone is on the pubes, the surgeon should bend the leg at the knee and rotate it by placing one hand on the knee, and grasping with the other below it, whilst the extension is making.

Desault thought the contraction of the capsular ligament prevented reduction: but I believe that the almost only cause of resistance in reducing luxations, is the contractions of the muscles: for the same orifice in the capsular ligament, which suffered the head of the bone

to escape out of it, would also be large enough to let it return. If the bone is not reduced, it will form a new socket for itself. A proof that the head of the femur will form a socket out of the acetabulum, is instanced by a girl, who fell and hurt her hip very much, so that she kept her bed for several weeks. When the swelling that supervened, had subsided, her hip was found to be luxated: Some time after she began to go about again, she fell and hurt the other hip; when she had got over this fall, she found that her legs were now, contrary to what they had been, nearly of a length, and after she had acquired more strength, she was able to walk on crutches, and gained strength in her hips every day. She was shortly after taken sick and died. The hips were dissected, and found both luxated; and acetabula were formed on both sides, which, no doubt would have done very well, had she lived.

I shall next speak of Luxations of the Knee joint

These occur very rarely; I never saw but two cases; and in both these the tibia was received on the external condyle. This is easily reduced, but not easily kept in its place when done. The leg is much distorted. Desault's long splint answers very well for keeping the bones in their proper situation. After they are reduced, the patient should keep his limb in a state of perfect quietude, for 8. or 10 weeks, until the ruptured

ligaments are perfectly healed. The patient must be kept in bed. I once saw a luxation of the ankle, tho they rarely occur. A lady with high heel shoes on, was coming down stairs & stepped too far, so that the heel of her shoe only rested on the step; the weight of the body bending the heel back, pressed the tibia forward of the astragalus, on to the instep, in consequence of which the toes were kept extended, the malleolus was likewise broken. I was not called till swelling and inflammation had taken place, and could not ascertain exactly, what was the matter. She was bled, and at the end of about three days, when the swelling had subsided, I was able to ascertain the nature of it. It was reduced by an assistant holding down the tibia, while I caught hold of the heel and toes & pulled the foot forward. A splint was applied for the fractured malleolus.

For the treatment of Sprains, I refer you to Boyer.

The joint should be immersed in cold water for some time; or water poured over it; after which cloths wet with vinegar should be applied, and continued for some days, and kept at perfect rest during the whole time: for if the patient walk, he is sure to bring on inflammation, which upon resting will subside, and return again upon motion, if used too soon; and if the patient continues to use it —

Suppuration and hectic fever may be the consequence; this in one case of a lady accually occured: caries of the end of the bone takes place, and amputation is necessary for the recovery the patient.

Lecture 17th.

Of Injuries of the head.

Injuries of the head may be divided in to external as they affect the scalp and integuments, and internal, as they affect the brain and its membranes. They are of several kinds. 1st. Contusions, 2d. Punctures. 3d. Inflammation of the brain and its membranes, and 4th. Concussions. I shall begin first with the scalp. The injuries done to the scalp are several. And first of Contusions. — When contusions of the scalp occur, in which there is a rupture of the vessels, they pour out their fluids forming a tumor, and swelling which has a pappy feel: around this tumor there are hard edges, which impart to the fingers a sensation of broken bone, often misleading the inexperienced, who are not aware of it, and inducing them to make incisions thro' the scalp

when to their surprise they find the bone bound, and thus produce a disagreeable suppurating sore, and perhaps exfoliation of the bone. The best treatment, is the application of vinegar in compresses to the injured part. In a few days, the extravasated blood will be absorbed.

The scalp is sometimes lacerated and torn loose from the bone for some extent, and under such circumstances it has been advised to cut off the loose portion; but this should never be done: the parts should be well cleaned from dirt &c. and the flap placed in its natural situation, and kept so by adhesive plasters or stitches. It has been objected to this that abscesses would form beneath, and the loose part have to be removed at length.

If abscesses do form, they must be opened, as in other parts; & it is better to run the risk of a few small abscesses, than to produce so great a deformity, & perhaps cause an exfoliation of the bone.

2: In Punctured Wounds of the Scalp.

In these cases, the patient is often afflicted with great pain, especially if the apponeurosis be wounded. If the inflammation extend to the pericranium, it becomes necessary to dilate the wound, the patient becoming feverish. I have seen inflammation of it occur in every kind of wounds, except incised wounds. It has been supposed that it occasioned

inflammation of the brain, and therefore trepanning has been advised: but I believe it does not occur when the injury is only on the outside; for it is hardly probable that two sides of a cavity will become so violently inflamed at the same time. For instance, in violent inflamation of the villous coat of the Stomach, the peritoneal coat is hardly ever inflamed, and vice versa in peritoneal inflammation, the external parts are seldom affected &c. Besides these affections there is another effect of injuries to the scalp; which is severe fixed pain in the part stricken. It takes place from the time of the accident. I have seen contusions of the scalp which created great pain in the part, and continued for a long time. The first case I ever saw, was that of a lady who had received an injury on the scalp upon the parietal bone, from the falling of a sash, which gave her great pain. The inflammation subsided in a few days, but the pain continued. She had used evacuants without any benefit. Upon first examining the case I thot the bone fractured, but upon further examination it was found to be only bruised. I proposed an inscision, which was made thro the scalp: the pain immediately ceased and never after returned.

Another instance, was of a young man, who had received an injury of the scalp, upon the parietal bone, on

one side, and at the same time received a blow upon the other, great pain followed it which still increased, and by the second day the pain became so great, that his friends had to hold his head, to prevent the ordinary sounds of the house, made by walking across the floor, exciting convulsions. Evacuating remedies were used, but with no effect: An incision was made thro' the scalp in the contused wound, by which he was much relieved, but the pain returned in half an hour, on the other side. The bruise on the other side was also laid open in the same way, and the pain cured and never returned again.

Some cases of this kind have resisted every treatment, & subsided only upon retiring into the country, and remaining there for sometime.

Next of the Brain and its membranes.

And first of compression. When injuries of the head occasion compression of the brain — Coma, sickness of the stomach, vomiting, involuntary discharge of urine and faeces. The causes that produce this are of two kinds, 1st. indentations of the scull, and 2d. the principal causes of compressions of the brain, are effusions of blood or other fluids collected inside of the cranium, either between the membranes and scull, in the substance of the

brain itself, or in the ventricles; and this may happen without a fracture of the cranium, or with it. Fractures of the cranium occur sometimes without these symptoms even when the bone is indented. I have seen slight depressions of the cranium, without any of the usual symptoms of compressed brain. An instance of this kind was in a fracture of the ~~cranium~~ forehead, so that the little finger might lay in the indentation, and yet no symptom of the injury of the brain existed; but in all the cases of this kind that I have seen, the injury was received just over the frontal sinuses. When no symptoms of compressed brain occur, the scalp should not be divided. But when symptoms of compression do occur, make an incision thro' the scalp, so that you can examine the bone, if the incision be not already sufficient; and relieve the compression with the trephine. It has been custommary to separate a portion of the scalp. I myself, once cut off about one fourth of it; but this is always cruel, since it is of no use. A simple incision, or crucial one, is always sufficient to examine the state of the bone. If a fracture be found to exist, it is safest to make a perforation thro' the bone to relieve the dura mater. In compressions of the brain arising from effusions from the vessels, the symptoms of compression

do not always occur, immediately, because the effusion does not always accumulate soon enough to produce it immediately. I was once called to visit a boy who had received a kick on the forhead from a stone thrown across the street the bone was fractured, and a little depressed; the pain was not so great at first, but that he went home and gave a history of the accident, but before I arrived, he was severely attacked, and fell from the chair, supposed to be dead. His pulse fell and his extremities were cold: the operation of trepanning was performed, and blood expelled from ~~the~~ beneath the scull, which had occasioned the compression, and he was immediately relieved.

3. The next injuries I shall mention, are such as produce inflammation of the brain, or of its membranes. The inflammation does not come on for sometime after the accident. Symptoms. The patient cannot sleep, has constant watchfulness, pulse hard and tense, the face becomes turgid and flushed, a sense of tightness, as if a chord was tied round the brain, thirst, suffusion of the eyes, delirium, nausea, vomiting &c.

If these symptoms continue for some days without any abatement, or rather increase instead of decrease; & if they are occasioned by contusions of the scalp, a free-

incision should be made down to the bone, to examine the state of the parts: if the inflammation within the skull, have proceeded on to suppuration, the pericranium will be found separated, spontaneously, from the skull, and discharge very commonly, a portion of thin ichorous matter; the bone will have an unhealthy appearance, generally of a whitish milky colour, but sometimes of a purple tinge: under such circumstances, the trephine should be immediately applied. Inflammation of the brain may occur from simple contusions of the scalp, or from concussions of the brain.

For contusions of the scalp, apply a bread and milk poultice, and if an abscess form underneath, treat it as in any other place. In all cases, low diet should be strictly adhered to, to prevent inflamation of the brain, or of any of its membranes; purging should be used, and copious venesection. Blisters should be applied, and kept running. In inflammation of the dura mater, where we have reason to believe there is a formation of matter on its surface, between it and the skull, an opening should be made thro the bone for its discharge. Sometimes both the dura and pia mater are injured: when it is the last, a perforation of the skull, is of no use, as the matter collected below the dura mater, cannot be evacuated. When there is reason to

suppose that inflammation of the dura & pia mater have taken place from contused wounds, the patient should be trepanned at the place of injury, which by removing the tension of the inflamed membranes, may prevent suppuration & and a train of disagreeable symptoms. —

When the degree of violence has been sufficient to fracture the Skull, we sometimes find the edges of the fracture are close, a question has then arisen whether the patient should be immediately trepanned or not. Mr. Pott, who took great pains to inform himself of the nature of injuries of the head, is of opinion that it had better be done immediately. And it is certainly safest, because there is a great risk of inflammation and suppuration taking place. The reason why it should be done is, that the fracture is compound, or else it would not be ascertained that the edges of the fracture were in contact. This makes it necessary; but I have seen when the inflammation was not great, suppuration of the dura mater avoided by the antiphlogistic regimen. In simple fractures of the cranium, when the brain is not compressed the trephine should not be applied immediately. —

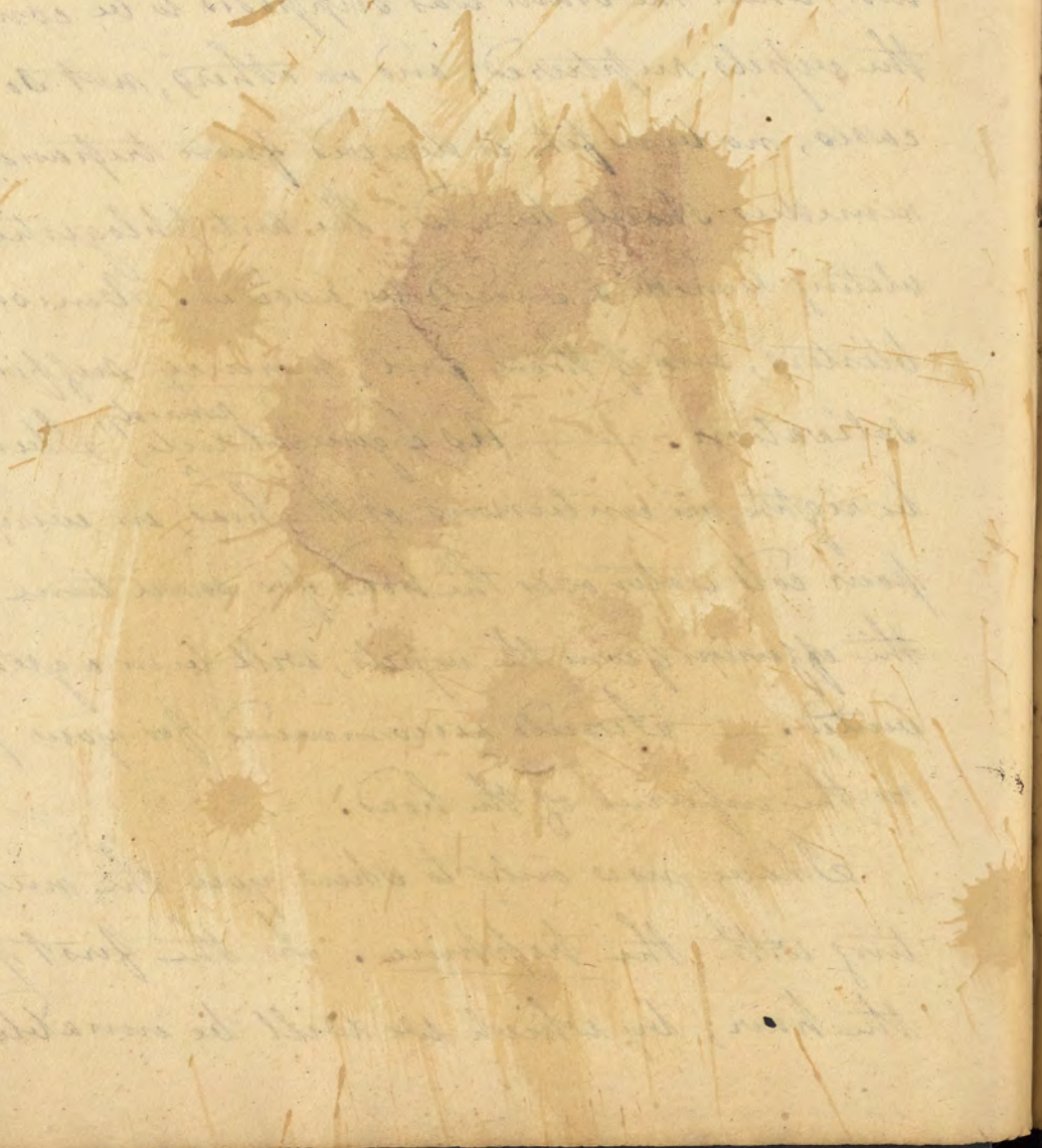
Concussion

This sometimes produces the symptoms of compression, & in other cases not. It may occur from jumping from

a height on a hard floor, from falls, or from violence done to the head.

In wounds of the scalp, where the patient becomes immediately senseless or delirious, beginning a sentence and breaking it off in the middle suddenly; it is supposed that the brain has been shaken. I doubt, however, whether some of the vessels in the inside of the cranium are not ruptured. Upon some occasions, I have, on examination, when the brain was supposed to be concussed, found the vessels ruptured; and on others, not so. In these cases, no benefit is derived from trepanning. General remedies should be used. The antiphlogistic plan. Stimulating remedies should be avoided. Venesection, low diet blisters, and if these fail, mercury sufficient to excite salivation. —— As a general rule, remedy, I believe it would be right, in contusions of the head, in every instance, to pour cold water over the head for some time, by which means the effusion from the vessels, will be in a great degree prevented. — I would recommend for your perusal, Pott on the injuries of the head.

I have now only to shew you the method of operating with the trephine. In the first place remove the hair; by which we will be enabled to examine



the injury of the scalp; next make an incision thro' the scalp, for which purpose a Scalpel, the handle of which is capped with iron, in order to clear the bone will be found fittest.

In laying bare the scull, take notice whether it be fractured, or whether a groove made by some of the vessels do not appear; if it be the latter, the edges will be smooth, if the former, they will be sharp. If the bone be depressed, it must be elevated; to do this, it is necessary to remove a portion of the sound part too. The center point of the trephine should be placed in a sound part or else it will tend to depress it the more. Whilst the perforation is making, great care should be had to move the center-pin as you still perforate deeper, so that it does not penetrate perforate the duramater. It is likewise to be carefully observed, whilst operating over the lateral sinus. When you suppose you are nearly thro the bone, the hole should be well cleared out to examine, if in any place, it is nearly thro'; for this purpose, a common toothpick answers very well: you may likewise have recourse to your elevator. (this should be often towards the last) try if you can raise the enclosed piece. If you find it nearly thro' on one side, lean your instrument on the other. It is advisable to force the piece out with the elevator before it is quite cut thro', as there will then be less danger of injuring the dura mater.

and any spiculae of remaining bone may be broken off with the elevater — A saw of this shape (fig.) may be used after the trephine where long depressions of bone requirerit, because, to use the trephine adjoining, would remove toomuch of the sound part of the skull. When symptoms of extravasation within the cranium, occur from external injury to the head, a perforation should be made thro the skull to let out the effusion. — When blood is collected between the duramater and skull, a hole may be made in this manner to let it out: Sometimes this effusion is but small, at other times it is of great extent, so that the duramater lying close to the perforation prevents its escape: a spatula introduced between the duramater and skull, will suffer the blood to flow out. Sometimes an effusion is collected between the duramater and brain, and upon the removal of the bone, instead of a flat surface, a convex one is presented, sometimes rising up so as to fill the opening of the bone; but no motion of the brain will be perceived. These are not symptomes of extravasation between the lobes of the brain, for if this was the case, if effusion had taken place between the lobes of the brain, the motion of the brain could be perceived. I have never seen the duramater punctured in any case in which the patient got well; therefore when it can be avoided, it should not be done. I have cured

an effusion in the brain, by prescribing the antiphlogistic regimen and bleeding as often as four or five times a day, ad deliquium animi for five days; which I believe would not have happened had the dura mater been punctured: there rises a fungus portion from the wound, suppuration takes place at its roots, and the patient dies. After the operation of trepanning is gone thro. bring the edges of the scalp into contact, and then apply a simple poultice of — bread and milk, which is the most easy application. Lint is not a good dressing; nor should any greasy dressing be applied as it would prevent the discharge flowing out. The poultice should be continued until the granulations appear, and then dress it with simple cerate. The application of the trephine in this case only relieves the compression of the brain; this done, we must guard against inflammation by bleeding, cathartics, low diet &c. The antiphlogistic plan should be persevered in while any symptoms of coma continue. And in depressions of the bone, the edges of the divided scalp, (when the brain is completely relieved by elevation) may be drawn together to unite by the first intension, as it would take a much longer time to heal, if it be poulticed, and suffered to suppurate and granulate.

Lecture 18th

Diseases of the Eyes.

First, of their inflammation. This may take place in the eyelids either in whole or in part; in the tunica conjunctiva, or in the globe of the eye, either in the anterior, or posterior chamber. Inflammation of the eyelids sometimes causes an extravasation of serum into the cellular texture, swelling the part very much, so that the patient cannot open his eyes; the skin becomes of a scarlet colour; this frequently comes on in the night, the patient supposing it to arise from the bite of an insect. It is, however, not easy to ascertain what is the cause, unless when it arises from mechanical violence.

Treatment. In general, if there be much inflammation, bloodletting should be used, which, with the exhibition of a mercurial purge & a low diet, will mostly answer the purpose: if this is not sufficient the application of camphor, or brandy, may be tried. The best way of applying these remedies is, to dip rags into them, wring them out and apply them over the eyes. The discharge of fluids in most cases of inflammation of the Eyelids, is but small. Sometimes the edges of the Eyelids

Lecture 18

Theory of the Cyc.

become excoriated and discharge a viscid purulent matter, agglutinating the eyelids, so that the patient has to wash them in the morning before he can get them open. The general opinion is, that it is owing to the ulceration of the mouths of the ducts of the glandulæ Meibomii. I however, believe it owing to ulceration seated at the roots of the hairs, resembling in this respect tenia capitis A proof of the correctness of this opinion is, that the hairs have been drawn out, and the patient got well. Treatment. A wash of solution of lapis infernalis has been advised, taking care to wash it off afterwards, so that none of it may get into the eyes. Spermaceti has been used with advantage. The most general remedy however, is a solution of Saccharum Saturni, or unguentum citrinum. I have however found that the unguentum supra applied between the edges of the lids is the best remedy. When this fails, drawing out the hairs has been effectual. A girl of about ten years old was cured by this ointment in about two weeks: She had been afflicted with inflammation and ulceration of the eyelids for 9 years

Of the Tunica Conjunctiva.

When this is inflamed, it becomes red, owing to the increased size and action of the vessels, which were before pellucid, but now admit red blood. The eye waters exceedingly, the patient cannot bear the action of light: the pain is of a burning kind

causing a sensation as of extraneous matter. In some instances the pain is not confined to the Eye, but affects the forhead.— Sometimes the inflammation is in a pimple or speck; this may be situated in the tunica adnata, or cornea. The only difference in them, in their effects is, that the latter obstructs vision. Inflammation of the conjunctive, often spreads over the whole cornea, throwing out coagulable lymph, and if not soon cured leaves a film behind it, obstructing the sight of the patient. And the pimple just mentioned, if not soon cured, leaves an opague speck behind it. The inflammation of the corners of the eye, causes an extravasation of the coagulable lymph, which occasions the disease called lingnis

The injuries done to the eye which occasion inflammation are— 1st. Mechanical, 2d by wounds, or by sand getting into the eye, trichiasis &c. 2. acrid substances applied to the eyes, these often occasion blindness, as lime, acids, smoke &c. 3. too strong light. 4th too much exercise of the eye in viewing small objects. 5th Cold. 6th Intoxication — 7th Small pox, venereal disease &c. Inflammation often occurs without our being able to assign any reason for it. Inflammation of the eyes is sometimes produced by the matter of gonorrhea — being applied to them. This is a rare occurence; but when it proceeds from this cause, it is mostly very bad.

X this is incorrect for there is no posterior chamber behind the choroidea lens -

Of the Inflammation of the Globe of the Eye.

This may occur either before the christalline lens, or in the posterior chamber behind the lens†. It is attended with great sensibility, pain and fever; when it affects the anterior chamber only, there is not so much pain; when it occurs in the posterior chamber of the eye, it occasions great pain: the fever runs very high, and in general, if it be not soon removed, the sight is lost. The first case I ever saw of this kind, the patient died. Treatment. First, remove all mechanical violence, and avoid the remote causes — If it be produced by some extraneous matter getting into the eye, as a speck of sand lodging between the lid and globe of the eye, it must be wiped off; a probe with a piece of soft rag wrapped round it, and pressed between the lids, will mostly disengage it. Should this be unsuccessful, water may be injected into the eye; if it still remain, by inverting the lid we are enabled to examine it, and move away the sand. If the sand stick in the corner, it will not be easy to see it, as the eye will roll about incessantly, and cannot be held still by the patient. A Speculum, or the handle of a pair of scissors will enable us to hold the eye still, so that we can examine it, and move away the offending object with the point of a lancet.

In Trichiasis, inflammation of the eyes, occurs from the hair of the lid growing inwards; when this is the case, pulling the hairs out, will produce a cure. But there is another affection of the eyelids; the tarsus itself, is sometimes turned in. It may be turned out and divided; or a piece of the skin of the lid may be cut out, taking care not to divide the conjunctiva; and the divided edges brot into contact and kept so by the interrupted suture. We can generally cure inflammation by bleeding, which should be regulated by the violence of the fever, and the degree of inflammation. When the patient has lost a considerable quantity of blood from the arm, he can bear cupping and leeches. If the inflammation still continue, there is another mode which is very beneficial, viz. scarrifications of the vessels of the adnata. The next remedy is purging. The antimonials are found very useful. Lastly, applications to the eyes, the mildest remedies should be tried first, of which perhaps, the pith of Aspa-ragus is best. Sometimes a bread and milk poultice answers very well, but it is frequently found too heavy. Crumb of stale bread put in a gauze bag and boiled and dipped in rose water, applied to the eyes, is found to be a very pleasant application. If this does not answer Laudanum, or Sac. Sat. vel. Alb. & Laudanum combined in

their usual proportions. But astringents should not be employed too soon. They do damage if used before the proper evacuations have been premised. In such cases, I think two drachms of vinegar greatly improves the remedy When the inflammation has gone on to suppuration, and matter is collected under the cornea, it should be immediately discharged by an incision made in the same manner as for cataract, instead of allowing it to open by the natural process of ulceration, which would render the cornea opaque. When these remedies fail, mercury used so as to excite ptyalism, with vegetable diet often proves. Two other circumstances are of the highest importance 1st. Confining the patient to a dark room, & 2. a diet perfectly vegetable. A seaton in the neck may serve to decrease the inflammation.

Unguis. This sometimes grows over the cornea so as to prevent the sight entirely. The only remedy is to dissect off the membrane which is easily done with scissars, except that part which adheres to the cornea, which should be carefully dissected off with a sharp knife. I have already mentioned that inflammation sometimes occasions opacity of the cornea, which almost always remains, but which sometimes goes off voluntarily, if left to itself. Mistaken notions of the nature and cause of the disease have led Physicians

and

into very erroneous practice – Molasses has been dropped into the eye, and finely powdered glass has been used with a view to wear it off, but they only serve to make it worse. If any part of the cornea remain transparent, an opperation may possibly restore vision again, by making an artificial pupil. I once saw a case where the patient had washed his eyes with his urine, whilst labouring under gonorrhoea. Inflammation supervened and all the cornea became opague. The patient applied to me for relief, and by his anxious request I consented to opperate on his eye. Tho with little hope, I pushed the knife thro the cornea & cut off a piece of the iris. The eye was then closed and the patient put to bed. He can now see to read if the print be large. I never saw such an opperation before. When the eyes are violently inflamed, it is difficult to remove the inflammation. I once had a case of violent inflammation of the eyes; the patient laboured under great pain, in which bleeding, low diet, – purging, Salivation &c. had been used without succes. Cupping and scarrifications were likewise useless. He was cured by tarwater alone, wetting rags and laying over them.

Fistula lachrimalis.

It is impossible to cure this without a knowledge of anatomy. The tears secreted by the lachrimal glands, which

are not used to lubricate the eyes, are taken up by the puncta lachrimalia and carried to the lachrimal sack, from whence they are conveyed into the nose at the lower part just at the lower turbinated bone, by means of the ductus ad nasum. These two ducts which lead into the nose in common with other ducts, are liable to strictures. When they are stopped by any means, they become swelled between the obstruction and the eyes. Tears form in the eyes, and the sack is protruded. If you prep on the swelling the tears will regurgitate, and if the pressure be increased, the tears will be followed by a viscid matter resembling mucous, which is probably secreted by the inner surface of the sack. If the eyelids stick together, they must be washed, and a piece of soft dressing placed between them. Not unfrequently inflammation takes place in the lachrimal sac, occasioned by the obstruction of tears, or from the patient taking cold. The inflammation is generally attended with fever, bloodletting and low diet are necessary for the cure. When the sac is distended so as to burst in the eye, or opens by ulceration, it is then called fistula lachrimalis. In fistula lachrimalis occurring from strictures of the lachrimal duct, no inconvenience is experienced by the patient, only that arising from the tumor which may easily be removed, by placing the finger on the internal canthus of the eye, and pressing the sac, the tears

will flow out down the cheek.—

In accumulation of tears in ~~inflammation in~~ the lachrimal sac, occasions the inflammation to terminate in suppuration. Cure. If the sac can be opened by a probe pointed passed from the sac below the stricture, so as to let the tears flow into the nose. After the probe is withdrawn, a piece of bougie long enough to reach from the outside of the eye into the nose, should be introduced and kept in to prevent the stricture from stopping the passage again. The bougie should be long enough to project about ½ of an inch, which should be bent down over the cheek. When the duct cannot be opened we must make an opening thro' the os ungues into the nose for the discharge of the tears. It sometimes happens that the fractured edges of the bone, which is made by puncturing the os ungues, throw out a bony matter, and stop up the opening again. The swelling of the sac shews us where to make the opening, I shall now shew the method of operating. When we make an thrust the instrument to introduce the punch, the back of the knife should be uppermost to prevent cutting the tendon of the orbicularis palpebrarum; the incision being made a probe is to be passed up the nose to make the necessary resistance against the puncturing instrument, which is a hollow punch invented by Mr Hunter. It is to be introduced into the sac till it comes in contact with the os unguis,

thro' which the opening is to be made. When the opening is made in this manner, the use of a bougie is necessary. It is sometimes attended with fungous and caries of the bone. The carious portion of the bone should be extracted, and the fungus treated as in any other part. Bring the edges of the wound together and secure them with adhesive plaster, and the tears will flow thro their newly made channel without difficulty.

Lecture 19th

Cataract.

By this term is meant an opacity of the christalline lens or its capsule, which prevents a transmission of light to the retina. It shews itself by the speck behind the pupil, and is most common=ly gray, sometimes black, and I have seen it of an amber colour. It commences with dimness of vision, compared by patients to look=ing thro gauze: and sometimes before any opacity is discerna=ble, by looking into the eye, there is to the patient the appearance of motes, threads, or hairs floating in the air before him. The dis=ease seldom occurs in very young people; mostly about 40, but I have seen it in an infant. It often comes on without any external violence. I have seen one case follow a blow, ano=ther trichiasis. ——

A long list of medicines have been employed for the cure of cataract, and mercury may be placed at the head of them, without any good effect. this has been assisted by bloodletting, purging, cupping, blisters, leeches, electricity &c. but found to be of no use. If it arise from mechanical violence, it may dis=perse, indeed nature unassisted by art, possesses the power of removing the opacity; of this I have known several ——

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instances. I think it takes place oftenest when the capsule of the lens is opaque, and oftener in women than in men. I have seen the cases of two young women in whom the absorption occured. They could see by the edge of the convex lens, which makes me believe the lens was removed. I have seen another case brot on by an unsuccessful attempt to couch. As medicines are unsuccessful in the cure of this disease, it is a happy circumstance that it may be relieved by surgery.

Two operations have been proposed, Viz. 1. Couching and 2d Extracting. Couching is performed with a needle; this is passed thro the Sclerotic coat about one tenth of an inch from its junction with the cornea, and pushed in till it gets to the center of the lens; it is there turned with its flat part against the lens, which is depressed below the vitrious humor; if it should rise the operation must be repeated.

Extraction consists in making a semisection of the cornea, thro which the lens is removed from the eye. Both operations have been performed: that of couching is the most antient, that of extracting the best. It is the best, because 1st. the operation is not so painful; this is proved by comparative operations. The same patient has had the lens extracted from one eye, and depressed in the other.

2d. When the cataract is taken out, it can never again

obscure vision, but it may rise repeatedly when depressed occasioning a return of blindness; and each time the operation must be repeated. It sometimes hangs loose in the posterior chamber of the eye, and when the patient stoops causes blindness by its falling upon and closing the pupil. It has been alledged that the lens may be absorbed, but this is seldom the case.

3. When the cataract is fluid it may be evacuated but cannot be depressed. I have known it to be entirely fluid. It may be of the consistence of calves foot jelly, or of the white of an egge not completely coagulated.

4th. When the capsule is opaque as well as the lens it may be pulled out, but such opeque capsule cannot be depressed with the couching needle. The opaque capsule is by no means a rare occurrence. It cannot be depressed because it stretches and bends down in that part in contact with the needle, and after the operation returns to its place by its elasticity.

5th. When adhesions exist between the capsule of the lens and iris, by opening the cornea, they may be torn in extraction. but not in depression without injury to the iris. In one instance I saw the iris torn off.

The inconveniences attributed to extraction are,

1st. An opacity of the cornea arising from the cicatrix; but none exists when it is divided by a sharp knife, with

but one stroke. If scipars be employed there is sometimes an opacity, but this is not before the pupil, and of course will not impede vision.

2d. The passage of the lens thro' the pupil is said to stretch the iris so irregularly as to form an irregular pupil. This sometimes does take place, but it does not prevent vision, besides, it occurs sometimes in depression. The patient sees as well afterwards as before.

3d. The hazard of cutting the iris in passing the knife acrop the cornea; unless the operator be very careful in passing the knife straight acrop the eye, the aqueous humor will escape thro' the section of the cornea, and the iris will fold itself upon the edge of the knife, and part of it will be cut away; but this may be avoided by rubbing the anterior part of the eye, which disengages the iris.

4th. The great danger that the vitreous humor may escape: but this only arises in consequence of undue preparation being made the moment the section of the cornea is finished. Preparation at that time is unnecessary and should not be made.

As every case of cataract does not promise equal success, it is of consequence to know what circumstances are unfavourable. When it is combined with other

diseases the operation is improper. The circumstances favorable to the operation are, the eyelids should be free from oedema the patient should be free from pain in the head; when the operation has been performed during pain in the head, the pain has been much increased. The Surgeon should not be deceived in examining the eye, this may happen from opaque spots on the cornea, and a particular reflexion of light from the eye. He may avoid the former by looking at the eye sidewise, the pupil will be seen below the spots. In the latter the patient should be placed with his side to the windows, that the rays of light may fall obliquely on the eye; the pupils should contract and dilate freely. This contraction and dilatation does not however, prove the retina to be sound; and it may be sound and the pupil be immoveable. If the patient can distinguish light from darkness, the operation may be advised. In cases of immobility of the pupil when the retina is sound, the iris probably, ~~thus~~ adheres to the capsule of the lens. I saw the case of a woman who had a cataract in each eye, the pupil moves freely in both. I operated, and found both lenses as hard nearly as stone.

The patient saw with but one eye tho' the —

operation was performed equally in each. The patient distinguishing light from darkness is not a certain test.
Before advising the operation, it will be necessary to enquire if the patient be subject to coughing, or apt to vomit or sneeze. Some old people sneeze violently. — If the patient be subject to sneezing, we should choose the time for operating when he is least affected with it. I have seen persons on the upper lip with the finger when the inclination of sneezing came on suspend it. I knew a case where sneezing ruptured a vessel in the iris; hemorrhagy ensued, which did not stop till a coagulation of blood took place. This extended between the divided edges of the cornea and prevented their union. I was fearful of removing the coagulum lest hemorrhagy should again ensue. The eye suppurated and the patient lost his sight. Sneezing might also force out the vitreous humor. Persons apt to faint on every occasion are bad subjects, they should take laudanum before the operation. As inflammation sometimes occurs to a considerable extent, and may go on to suppuration it is proper to confine the patient to a low diet for a few days; and to reduce the inflammatory diathesis

it will be necessary to use bleeding, purging, &c 8 or 10 days before the operation. A day or two before operating a blister may be applyed to the back of the head neck. The bowels should also be opened to prevent the inconvenience of rising for a few days. The best seasons for operating are Spring and Autumn. Cold or hot weather is not proper because in the first, the room cannot be kept equally warm, which exposes the patient to the risk of taking cold; in the latter he is apt to be restless.

The instruments for operating are, First, for making an incision of the cornea, a knife after the direction of the barron Wenzel. It should gradually increase in width from the point to the handle heel; it then serves as a wedge to prevent the escape of the aqueous humor. It should be thin but sufficiently firm not to be broken. The upper edge must be blunt till near the point, the rest very sharp — The knife should be very sharp; it may be examined with a microscope; or a much easier way is to look at it before a looking glass. In choosing the proper knife, we should get one wider at the handle than the semidiameter of the cornea. — 2d. A needle a little curved at the point, with which the capsule of the Christalline lens may be torn. — 3d. a little scoop of gold

or silver to extract small fragments that remain behind. — 4th a small hook to be passed thro' the pupil and fixed in the body of the chrystalline lens. for its extraction. — 5th A small pair of forceps for the extraction of small fragments of the torn capsule that may remain.

It was the custom of antient surgions to use the speculum oculi. I use no instrument of this kind to steady the eye The great objection to all instruments of this kind is, that they occupy one hand of the operator. The Surgion cannot rest the anterior part of the eye; besides, it gives pain to the patient & may excite inflammation. In proceeding to the operation, I find it is of use, while fixing the eye, to assure the patient there is no pain or danger attending it — The patient is seated on a low chair with his side to the window, or else the reflexion of light from the ~~window~~ cornea, will prevent your from seeing the cataract; a bandage is applied round the head just above the eyes, having two depending compresses attached to it, to cover the eyes. that compress hanging over the affected eye is pinned up to the bandage; if the hair is long before it should be cut, to prevent the chance of its getting into and irritating the eye. The Surgeon is seated on a chair considerably higher than that of the patient, and taking the knife into his right, or left hand, according as the —

Fig. 1. Fig. 2.

right or left side is to be operated upon, he proceeds to make the section of the cornea. The patients head should be supported on the breast of an assistant, who raises the upper eyelid; in doing this the skin should be folded on the superciliary ridge, so as to prevent its closing. The tarsus should be pressed against the superciliary ridge (frontal margin) of the socket. The surgeon pulls down the under lid, and waits till the eye is steady; at that moment he applies the point of the knife to the cornea, at about 1/16 of an inch from the Sclerotica. — He only applies the knife, does not suddenly puncture, for at that time the eye generally recedes from the knife, it should be followed by the knife, & the moment it becomes fixed, the puncture should be made. The knife is then carried across the eye, and brot out at the opposite side, making a semicircular inscision. While the section is making, by the discharge of the aqueous humor, the iris comes forward so as to endanger its being wounded, the motion of the knife must be stoped, and the iris made to recede, by gently rubing the cornea; the inscision is then to be completed. —

That the eye may not be the least preped upon, the assistant who raises the upper lid, should let it fall as soon as the point of the knife has passed thro the opposite side of the cornea. In making the inscision, never draw back the knife, for if this be done the knife no longer acts as a wedge, to prevent the escape of

the aqueous humor; the knife is wide enough to cut freely out. But if owing to the motion of the eye, or any other cause, the knife should be drawn back; it would be advisable to desist from the operation, and to defer it till the wound in the cornea is healed. Barrow ~~Barrow~~ Wensel — advises to puncture the chrystalline lens during the section of the cornea, by dipping the point of the knife into the pupil. This might be done if the eye were very steady, but it is mostly so unsteady as to render the Barron's directions impracticable. I prefer — tearing the capsule afterwards with a needle. With this the capsule can be much easier torn, and if it should be opague, it can then be much easier extracted. In tearing the capsule, care must be had not to injure the iris: this being done, the eye must be closed to give it rest and that the pupil may dilate. —

After resting a few minutes, the eye is opened by the Surgeon, & gradual pressure made on the ball, at the same time the divided portion of the cornea is raised a little with the scoop. —

If the lens does not come easily thro the pupil, the Surgeon — takes hold of it with the needle or hook to facilitate its extraction.

The moment it is out, the lids should be closed and remain so for some time. They are afterwards opened and the state of the pupil examined. If the capsule be not opague, the patient sees; if opague the pupil remains white. — The surgeon should next proceed to extract the fragments of the capsule: these

are often knot into the anterior chamber of the eye, and discharged by gently rubing the lid over the cornea; but if they remain in the eye, the scoop should be employed: this should not be pushed too far for fear of injuring the capsule of the vitrious humor. If the capsule of the lens is to be taken out, a small forceps is the best instrument. Sometimes the lens cannot be extracted by any moderate degree of pressure, tho aided by the hook: it is then probable its capsule adheres to the iris. The adhesions must be torn away by the needle, but this requires great nicety. Take care not to throw the iris into folds or it may be torn. Sometimes before the operation, we know the ~~operation~~ capsule is opaque. We judge of this by spots of opacity appearing as though detached from the ~~lens~~ lens. In this case, after the section of the cornea (as it is known the capsule must be extracted) I advise the anterior part of the capsule to be pinched up with a pair of forceps by pulling the whole membrane, may be easily taken out. The capsule is extracted first, because it can be readily laid hold of while the lens remains in the eye. The lens when diverted of its capsule falls to the bottom of the eye; it may be extracted with a small hook. A small portion of the vitrious humor always escapes. After removing cataract it is customary to exhibit various substances, as watches and the like, to know if the patient has vision, but the

eye should not be kept open too long. During the operation, none of the relations of the patient should be present. A Dutchman who had been blind five years was operated on for a cataract, his wife stood by during the operation and was the first person he saw. The poor man burst into a flood of tears, and it was with difficulty he was prevented from litterally crying his eyes out. After the operation is completed, a soft dry rag is to be applied to the eye; the depending piece of the circular bandage is to be unpinned, and it will turn down over the eye; on this a bandage should be applied and carried round the head. The patient is then put to bed, and ordered to lye on his back to prevent the escape of the humors. All light should be excluded from the apartment: the patient should live on a diet of vegetables. In taking drink he must not raise his head; a teapot without a lid should be used for giving him drink. The patients hands should be secured by pieces of tape tied to the bedrails, to prevent his rubing his eyes in his sleep. — In 8 or 10 days the eye may be examined — If pain or fever comes on use remedies to remove them, and change the dressings every day, as the moisture that is discharged from the eye, is absorbed by the dressings, which becoming dry, cause irritation. When the dressings are changed always pull down the under eyelid. The hairs, if they have got into the insertion of the cornea, prevent its healing —

Lecture — 26th

Hernia.

Hernia may be defined a tumor occasioned by a protrusion of some of the contents of the abdomen. This takes place at different parts of the body, but most frequently in the groin, owing to the parietes of the belly being weaker at that part.

Opposite the groin there is an opening for the passage of the ~~spermatic~~ spermatic cord in men, and for the round ligament in women; thro' which the parts are protruded, either the omentum or intestines. This protrusion may happen at different parts of the body; When the tumor is found in the navel, it is called umbilical hernia; when in the groin, bubonocele; and in the thigh, femoral hernia. In every instance it is caused by a protrusion of some part of the omentum, or of the alimentary canal. In every hernia, the protruded parts are included in a sac, which is formed by an elongation of the peritoneum. — There is one species of hernia, called hernia congenita, well worthy your attention; here the bowels are in contact with the testicles. The tunica vaginalis, which is properly a peritoneal covering of the testes

passes with it in its descent down into the scrotum: the upper part of this sac generally closes up round the spermatic cord, immediately after the descent of the testicle which is about birth, or 2 or 3 days after, or before. It sometimes so happens that this descent of the scrotum does not immediately close up after the descent of the testicle, but remains open for sometime; and when it does not close up, by coughing, sneezing, crying &c. hernia is produced. As there are several kinds of hernia, I shall at present confine myself to that species called bubonocele —

Bubonocele. The symptoms are a swelling in the groin beginning at the abdominal ring and passing into the scrotum or labia pudendæ. The testicle can be felt at the bottom of the scrotum; the tumor is soft bears handling well and when the patient lies down disappears. Pressure on the abdomen makes it more tight, and when the Surgeon lays his hand on it and the patient coughs, he will feel pressure made against his hand, causing a sensation as if distended with wind. There are some diseases with which hernia is likely to be confounded; as bubo, swelled testicle, lumbar abscess and hydrocele, but by paying attention to circumstances, it is very easy to distinguish between them. A bubo

is generally preceded by a shower; is hard and painful & the tumor does not disappear upon lying down. It is likewise very easy to distinguish between bubonocele, and swelled testicle, or hydrocele. The testicle is hard and painful to the touch, is only formed at the bottom of the scrotum, and the spermatic cord can be traced to the abdominal ring, at which place it is free from swelling. In hydrocele the tumor begins at the bottom of the scrotum, and works upwards; whereas the hernia begins to swell at the top or groin, and works downwards. The fluctuation may be felt in hydrocele; and in swelled testicle or hydrocele, we cannot reduce the tumor by squeezing it. But hydrocele ~~hydrocele~~ is sometimes more difficult. I have seen it enveloped in a cist, which when the patient strained hard was protruded, the testes were at the bottom of it. Hydrocele is in general diaphonous. A case came under my notice which was supposed to be hernia, & as such was treated. I was convinced on examining it, that it was hydrocele. It was diaphonous, admitting the light to pass thro' the tumor; and was cured by tapping, and afterwards by injecting of wine.

In the lumbar abscess, the matter passes from its seat in the Psoas muscles, down under Poupart's ligament, following the course of the muscles, and forms a tumor in the upper and

anterior part of the thigh, at which place the fluctuation can be felt; and the tumor can be pushed from the thigh up into the cavity of the abdomen and viceversa, according as pressure is made on either. If your hand be laid on the abdomen and pressure made, the tumor on the upper part of the thigh will be rendered more full and tense. The great danger liable to take place in hernia, is from great inflammation ~~in consequence~~ which ensues from the stoppage of the circulation and of the feces, in consequence of a stricture coming on. This stricture may be formed whether by the neck of the sac, or by the tendon of the external obligue. When the existence of a rupture is ascertained it should be reduced and supported by the application of a truss — Not unfrequently the patient can reduce it himself; but when he cannot, the Physician, by laying him down in a horizontal position, for the most part can effect it, after which a truss should be applied directly over the orrifice. The truss is very generally applied on the soft part of the pubis, so as to press the spermatic cord, occasioning great uneasiness to the patient, if continued for any length of time; or applied too far to the groin as not effectually to close the rupture. The best way is to examine exactly with your fingers, tracing the tumor into the abdomen, and when you find the orrifice, apply the truss, so that the soft part shall be exactly over it, just above the upper

edge of the pubis. Trusses are mostly employed for a particular age; but they should be employed when necessary at all ages.

Strictures sometimes prevent the reduction of the protruded part but we cannot always reduce them even when there is no stricture, and this for several reasons; first because too large a quantity of bowels have collected in the tumor to allow of being returned. 2d. The next difficulty in the reduction, is from an alteration of a part of the omentum; and 3d. from adhesions taking place between the protruded parts and the sides of the opening; or from the adhesion of the protruded parts amongst themselves.

When the difficulty of reduction arises from adhesions as in the last case, it will admit of no remedy, only being supported by a truss. Where there has been no adhesions I have succeeded by confining the patient to a horizontal position, low diet, bleeding, cathartics &c, and then applying a truss. When adhesions take place, so that the surgeon is unabled to reduce the tumor, a sac made just so as to contain it, should be applied, or else the hernia will continue to enlarge till gets to a great size. I saw one case in which the sac had got down to the ~~lower part of the~~ knees. If the patient when in such a situation, neglects the truss, he is not only in great distress, but in danger of Strangulation. The symptoms of strangulation are

increase of hardness of the tumor, obstinate costiveness, fever if the patient stand up, hard, contracted, tense pulse; & sometimes vomiting, and the tumor becomes painful to the touch. When called to a case of strangulated hernia, it requires immediate care and attention. In proceeding to return the protruded parts, the patient should be placed in that situation which will throw the contents of the tumor towards the abdomen. He should be placed on a firm bed or mattress, with his buttocks raised considerably highest and the thigh bent upon the body, to relax the muscles. When this is done, squeeze the protruded parts cautiously with your hand, so as not to injure the bowels. When the patient can do this himself, it is best, as he will be likely to use less violence, so as not to injure any of the parts. This operation is called taxis. If this is not sufficient bleeding copiously has been of use, and Mr Pott advises to continue it ad deliquium animi, and then by if it can be accomplished The bleeding tends to prevent any inflammation. I have not however seen one case of bleeding ad deliquium animi where the reduction succeeded immediately after. Cathartics are then generally given. I have found cream of tartar given with about 8 or 10 grains of jolap, and one drop of mint answer very well. Along with this the warm bath should be

used; the patient should be kept in till he become very weak, & while in the bath the Surgeon should try again to reduce it. This, from producing a general relaxation, will, I have no doubt, succeed frequently; I have therefore a very high opinion of warm bathing in ~~hernia~~ Strangulated hernia. When all these remedies fail, injections made by a decoction of tobacco (ʒi to a pint of water) — may be used; this decoction is to be thrown up so as to occasion nausea, and general relaxation. This is the most successful remedy in strangulated hernia; the fumes of tobacco are not so convenient, as they require a peculiar apparatus, and sometimes they excite ~~vomiting~~ spasms. When all these methods fail, the application of ice or snow has proved useful. Strangulated hernia has been reduced by cold. This remedy is particularly recommended by Mr Wilmer; I would not hesitate to employ it when other remedies fail. It should be continued for some time perhaps for the space of three or four hours, if necessary. If all these remedies fail we must have recourse to an operation, for if the patient is not relieved by some means, he soon grows worse, the sickness becomes more distressing, the pain is more intense, the belly swells, the fever runs high, hiccough, cold sweats &c occur; but after a while these symptoms cease, and the patient thinks himself getting better; and in some instances the contents of the tumor voluntarily go up; but the symptoms

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soon return worse than before, and death quickly closes the scene from mortification of the intestines coming on. It is difficult to tell when is the exact time to perform the operation, — because sometimes the bowels mortify by the pressure in a short time, and at other times the patient will bear it for four or five days, and, then get well: but in general I would advise, if the above remedies fail, to perform it, in at most 30 hours after its commencement, if the strangulation remain. I have once succeeded in reducing the tumor after all other remedies failed, by raising the foot of the bed considerably higher. In this case the tumor receded voluntarily, in the course of the night. — There are two methods for operating for hernia, and first for — Bubonocele.

In proceeding to perform this, the first precaution is, to shave away the hair. Then make an incision in the direction of pouparts ligament, about 4 inches in length and descent up the upper part, laying the tendon of the external obligue bare, so as to expose the ring. This done, puncture the tendon in the direction of its fibres, at a small distance about an inch from the ring. A director is introduced at the puncture and papsed out at the abdominal ring; the — part of the tendon lying over the ~~fibres~~ director is divided lengthwise of its fibres, an attempt is now made to reduce

the contents by taxis. This practice has been disapproved by some surgeons, who say that the contents of the sac may be in such a condition as to forbid reduction, and that the sac should be opened to examine its contents, for, say they, if any of the parts be killed, or the sac contain acrid serum, and be returned in this state into the abdomen, it will occasion great inflammation, but I would ask these surgeons, if they would not before the operation use every exertion to reduce it; and in the present case, if it can be reduced, it will prevent the necessity of opening the sac, by which the risk of peritoneal inflammation will be avoided. Opening the sac would produce a communication for the air to the cavity of the abdomen; and all such ~~inflammations~~ communications are attended with violent inflammation, which mostly terminate fatally on the third day or sooner. Should the attempt to reduce the protruded contents prove ineffectual, the operation must be continued. The incision is continued to the bottom of the scrotum, and the sac is laid bare: after this, attempts to scratch thro' the sack should be repeatedly made with the point of a scalpel; trying with a probe after each scratch, to see if a puncture be made. When a puncture is made introduce a director, and with a blunt pointed bistoury enlarge the orifice so as to admit the finger, which is the best

director for the knife; after that the sac is divided the whole length of its from the ring. Next examine the contents of the sac, which if sound must be carefully returned to the abdomen. This, at times cannot be done, for three reasons:- first adhesions, 2d a change in some of the protruded part, or 3d a structure in the neck of the sac — above. When this cannot be done on account of a structure in the mouth of the sac, the structure is then to be divided, taking care not to wound the intestines; the finger should be introduced as far as possible for a director to the knife, & in general the mouth of the sac is not so small but that the point of the finger may enter a little way. Sometimes adhesions take place so that the intestines cannot return when the sac is laid open. These may be easily separated either with the finger or the handle of the scalpel. If the punctured part be altered in shape the ring must be dilated to admit of its return, except it be formed by omentum, then the altered part may be cut off. If — mortification of the protruded part take place, it should be separated, and the sound part of the intestine joined by the interrupted suture, and sewed fast to the sides of the wound.

Notwithstanding the faeces will for some time escape thro the orrifice, it will mostly in the end heal well. —

Altho' in bubonocele, it is best not to open the sac when it can be avoided, yet in femoral ruptures, I believe it.

it is mostly safest to open the hernial sac and then to divide the stricture. The sac here is externally thin, and scarcely to be seen. In proceeding with this operation, a great deal of care is necessary to prevent wounding the intestines. When cutting near the neck of the sac, care should be had not to lean to either side; because on the out side of the neck of the hernial sac, lays the epigastric artery, and on the inside of it the spermatic cord, crossing each other direct by over the stricture part, so that if you cut towards the inside, you will wound the spermatic cord, and if to the outside, the epigastric artery, and if posteriorly, the great blood vessels. To remedy this Mr. Gimbernat proposed to dilate the stricture by making the incision towards the pubis, this method is, after opening the sac, to introduce a director or the finger which is better, along with the bistoury — having its edge looking towards the pubis; when you come to the stricture, the incision is to be made towards the pubis, dividing the stricture so as to cut behind the spermatic cord. Dr. Monro advises to cut from the neck of the sac towards the navel, so that by keeping that direction you might dilate the stricture towards the angle formed by the epigastric artery and spermatic cord, and thereby avoid cutting either.

Mr. Hey supposes that the

femoral ligament forms the chief obstruction to the reduction of the protruded parts.

I would advise you to read Pott, Hey, and Cooper on this subject. Sometimes the finger cannot be ~~reduced~~ introduced on account of the smallness of the aperture. When this happens, introduce a director under the stricture, and then — with a bistouri lay it open sufficiently to reduce the protruded parts.

If the protruded part of the intestines is found to be mortified, that part must be removed taking care to cut thro a sound part that the dead portion may be completely separated, and the sound part stitched to the side of the wound, so that the intestines may protrude about an inch. The protruded parts will in time as the wound heals, be retracted with in the cavity of the abdomen, and as they are drawn in the edges will come nearer in contact, till at last they will unite and form a perfect canal — completely within the abdomen; and the patient will discharge the feces in the natural way

Sometimes the omentum is found in a Sphacelus state. It should never be returned into the abdomen, or else the dead part will cause peritoneal inflamation. The folds must be spread out to extricate the intestines. and the mortified part may be separated by a pair of scissors. If an artery is wounded or divided, it must be taken up, leaving the thread sufficiently long to reach out of the abdomen. Mr. Hay has proposed taking off this portion with a ligature, tying it so tight as only to molest the omentum at first and then daily tighten it, till at last it is completely separated; and when the gangrenous part of the omentum, is protruded down thro' the omentum, his method is a very good one.

Lecture 21st

Hydrocel.

Hydrocele is a term applied to a disease consisting of a preternatural collection of water in the scrotum.

Of this disease there are three species. The first is an effusion of water into the cellular substance of the scrotum. The cells communicate. The second species is when the water is contained between the tunica vaginalis and testis. The third species is when the water is contained in a cist, or cists, on the spermatic cord, or body of the testis. —

The first which is an anasarcous tumor, is a symptom of a general dropsy, and is easily distinguished from the other species of hydrocele. It is of a smooth equal surface, and is diffused equally all over the scrotum. The tumor has a doughy feel; besides, indentations may be made by pressure with the fingers. The skin is nearly of its natural colour, and diaphanous. The skin of the penis also becomes ~~diaphanous~~ distended. If the patient lie down no diminution of bulk takes place in the tumor; the swelling begins at the bottom of the scrotum. The testicle can be easily felt at the beginning of the disease and likewise the spermatic cord, and no fluctuation can be perceived. —

The second kind, or that of the Tunica vaginalis, is owing either to an increased action of the exhalent vessels, or, as some say, to ~~an increased~~ the diminished action of the absorbents. The swelling in this species begins at the bottom of the —

scrotum, soft at first, but gradually grows more tense, and can not be reduced by pressure; tho' sometimes it collects suddenly from the rupture of a lymphatic. The tumor is small at first in which state the testis can be readily felt; but when the tumor is large, it is not perceivable. The fluctuation can can readily be perceived, and the tumor is diaphonous. The disease most likely to be confounded with it is hernia. It is however, easily distinguished from hernia, as in the former the tumor begins in the bottom of the scrotum and extends upwards, but in the latter it begins above, and works downward. Hydrocele is always permanent, whereas in hernia, the tumor often disappears when we lie down. Schirrous of the testicle has sometimes been confounded with it. We can distinguish between hydrocele and schirrous of the testicle, by the latter having swelled spermatic cord, and in schirrous the tumor is flattened, and is heavier than in hydrocele. It is scarcely possible to confound it with hernia humoralis. This kind of hydrocele is however very much complicated, so as to require much attention to distinguish between it and other diseases.

The 3d. Species is when water is contained in one or more cists of the spermatic cord. Here the testicle can be felt at the bottom of the scrotum. The tumor is diaphonous, and swells up to the abdominal ring; and in one

case I believe the tumor extended thro' the ring itself. In such cases there is much difficulty in distinguishing from hernia, only if we prep the tumor so that the water is forced into the abdomen, the instant we take away the prepsure it will return again, that prepsure on the sides of the tumor causes no difference off the former, but will often succeed in removing the latter. Having mentioned the different species, I shall next proceed to the Treatment. — No inconvenience results to the patient from hydrocele, but from weight and bulk of the tumor; tho' in hot weather it times the skin excoriates, and if the patient walk about causes pain in the back from the weight, this is relieved by the use of a suspensory bandage, which sits so easy, and is worn with so little inconvenience, that some patients refuse to submit to the operation. The first species — which is that of anesarcous hydrocele, is generally cured by medical means. It however at times happens that an operation for the discharge of the fluid is necessary for the cure. This I would advise to be done by means of small punctures made with the point of a lancet, that it may ooze out. This is preferable to making an opening with caustic, or the introduction of a seton, or making a deep incision which may produce mortification. The punctures are to be covered with dry lint; they should be

made in 4 or 5 places. Sometimes an anasarcous tumor is produced by a bursting of the tunica vaginalis.

A case came under my care in which as the patient was sitting still he felt something snap in the scrotum, and shortly after a tumor appeared, which was soft and diffused itself gradually over the whole scrotum; the skin became black which very much alarmed the patient, as he suspected mortification was coming on. Three Physicians were called in, who, not understanding the nature of the case were suspicious that his apprehensions were too well founded. Mr. Hunter supposed that the tunica vaginalis was ruptured, and the colour was owing to the escape of the blood; this proposition was readily agreed to, and the patient was informed that in time the blood would be absorbed, and the wound in the tunica vaginalis healed, but that he would be subject to a return of the complaint; all of which turned out as had been predicted. Next of the

Hydrocele of the Tunica Vaginalis

Dr. Else mentions a case of the hydrocele of the tunica vaginalis which was cured by purging. I have cured it by causing water to be poured on it out of the spout of a tea kettle two or three times a day. This method will often succeed in children. Sometimes it is absorbed without

any aid. When all these fail, it is necessary to have recourse to an operation. Relief may commonly be obtained by evacuating the water; this is done by means of a common lancet, which I prefer, or an instrument called a trocar, which consists of a silver tube, in which is a stilette, projecting beyond the cannula about ¼ of an inch, which part is triangular and sharp for cutting. The trocar is to be pushed thro the scrotum into the cavity of the hydrocele; when introduced, the stilette is withdrawn to suffer the water to pass off; after that is done the wound is closed by applying a strip of adhesive plaster, and the part supported by a suspensory bandage. This is only palliative and is not sufficient to cure the disease completely. But to produce a radical cure it is necessary something more should be done. There are several modes of effecting a radical cure; the object of them all is to effect union or adhesion between the tunica vaginalis and testis; of which I shall now mention only four. The most antient of these is to make a long incision thro the scrotum, so as to examine the state of the testis. When it is ascertained to be free from schirrous, lint is placed in the cavity between the tunica vaginalis and body of the testis, to excite an inflammation of the part, so that the two surfaces may adhere together. The lint is to be kept in till suppuration takes place freely, then it is to be extracted, when the tunica

vaginalis adheres to the testis, forming an union with it. This frequently succeeds, but it causes great pain and inflammation; and it not unfrequently happens that abscesses form after the patient is thought to be well. I have seen abscesses formed in the scrotum, in consequence of some portion of thread being left behind, six weeks after the wound had healed up. This I have seen once, but it frequently happens, under this treatment.

The next method is by means of an escher formed by means of caustic; this is not only attended with great pain and inflammation, but causes a large suppurating sore, to the no small distress of the patient. Mr. Ells has proposed to apply it only the size of a shilling, which he thinks would be sufficient to excite inflammation over the whole cavity. But this often produces violent inflammation of the whole scrotum, and sometimes mortification. This method is seldom used at present.

The next method is to pass a seton thro the scrotum, between the tunica vaginalis and testis. This method is recommended by Mr. Pott, but it is exceptionable, because sometimes the adhesions will take place only at the part of contact of the seton with the tunica vaginalis, and then the disease may again occur. And likewise when there are cysts in the body of the testis this treatment will not do, and there cannot be open

ed

without laying open the tunica vaginalis; but the cure must be effected by suppuration. Mr Earl has revived the the method of throwing stimulating injections into the scrotum. Some use wine diluted with one half water. I have always used it diluted with water. Some advise a solution of white vitriol, and I have no doubt but it would answer very well. Some have advised a solution of corrosive Sublimate, but if this is employed, it should, it should be used very weak. After the water has been drawn off, an injection of wine may be thrown into the tunica vaginalis; this will sometimes cause a good deal of pain across the lumber region, and has produced syncope. It should soon be let out, perhaps after three or four minutes. Inflammation will come on in about three or four days, but never runs very high, and soon subsides, without any trouble. If it should run high venesection may be necessary — Frequently in the expation of inflammation, the water again returns — In all cases of that sort I have effected a cure by pouring cold water ~~over~~ over the part, to the quantity of about a half a gallon per day. When the first operation fails, it is not so severe but that the patient will mostly submit to it again. When one or two injections will not do, Mr Hunter proposes to make an inscision about an

inch long in the anterior and upper part of the scrotum, so that the finger may be introduced to ascertain if any ~~hydatids~~ hydatids exist, and fill the space between the tunica vaginalis and testicle with flour, or a small bolus of dough, to cause an equable suppuration over the whole cavity; after four or five days, suppuration will have taken place, at which time the dough will have become soft, so as to resemble only thickened pus, in consequence of mixing with the fluids thrown into the cavity. The contraction of the scrotum which takes place will force out the dough gradually; and as it is removed or evacuated, the sides are brought into contact gradually, or regularly. adhesions take place, and the cure is effected. I have performed this operation several times, and believe it to be the best mode of curing the complaint. I now shew you the operation of injecting it with wine.

The instruments are a trocar which consists of a silver canula about three inches long, with a small handle to the end of it; in this tube is a stilette projecting about 1/8 of an inch beyond the end of it — A cock with a bladder or gum elastic bag fixed to the end of it for containing the injection. The patient is seated on the edge of a chair and directed to grasp the bottom of it with his hands; because if his hands are at liberty he will be apt to disturbe the Surgeon.

When fixed in this manner, so that the scrotum projects over the edge of the chair, the operater takes hold of it, and causes a tenseness in that part of the tumor where he wishes to make the puncture, and then pushes in the trocar; as soon as this instrument has penetrated the cavity, the stilette is withdrawn and the cannula pushed further in, to prevent the tunica vaginalis slipping off the end of the tube, which would prevent the water from paping out. When the water is drawn off, an injection of port wine is thrown in, retained a while, and then suffered to run out. The wound is closed with adhesive plaster, the scrotum is suspended, and the patient put to bed. — Care must be had to keep the cannula thro the tunica vaginalis when you inject, else the whole of the contents will be thrown into the cellular substance, without effecting its way into the proper place, and a new operation will be necessary. Care should also be had to examine well where you puncture the scrotum, to avoid wounding the testicle which too often happens. A gentleman troubled with hydrocele called a Surgeon to his aid, who performed the usual operation with a trocar, but to his great astonishment no water flowed upon his withdrawing the Stilette. —

Another Surgeon was called, who likewise performed the operation nearly in the same place, but with similar success.

A third Surgeon was called, but met with the same disappointment as the others. They now agreed that it was a very difficult case to understand. Mr. Hunters aid was then desired who upon examining the case and recollecting the peculiar sensation the testis gives when squeezed; tho' he could not feel it situation, yet by the sensation caused by squeezing, he found the testis to be attached to the scrotum at the anterior parth just where they made their punctures; the trocar had been pushed into the body of the testis. He then pierced the scrotum at the lower and back part of the tumor where the testis usually lies, and the water flowed out as is usual in the common cases.

Lecture 22d.

Lythotomy.

Calculous concretions are formed in different parts of the body. I have found one of the bigness of a pea at the root of the tongue. — They are formed in the salivary ducts, in the lungs, uterus &c. but they are most commonly formed in the organs of urine. The incrustations formed deposited on the sides of the vessels which hold urine, prove that the calculous substance it contains may readily form a stone. The quantity of calculous matter it varies in different persons; and it is greater at one time than another, in the urine of the same person. It is not my intention to enquire into the circumstances which dispose the body to the formation of calculus, it being sufficient for my purpose to know that it can be formed by a disposition from the urine.

I have seen a calculous concretion form on the end of a catheter that had remained in the bladder but for a few days. —

The different kinds of substances that have been found in the substances of calculi, prove sufficiently that any

solid substance remaining in the bladder for a few days, may be a nucleus for a stone. The stone is not always of one uniform consistance, but consists of several lamina, some of which are hard and some are soft; they are likewise of different colours, some are white, and some are ~~white~~ dark brown.

The reason of this difference, I believe has never been satisfactorily accounted for. Stone is not exclusively formed in the bladder; it is formed frequently in the kidneys and prostate gland. I believe it most frequently originates in the kidneys and is washed down the ureters into the bladder, tho' this is not always the case. When in the kidneys it occasions pain in the small of the back. A case of this kind was cured in a gentleman by riding on horse back from Germantown to Philadelphia. But he was the same day affected with stone in the bladder. When stones are formed in the kidneys, there is a considerable difference from what happens when formed in the bladder. Mr Bloomfield has described the symptoms so accurately, that I shall give them in his own words.

When they exist in the bladder, they occasion a distention of that viscus, by preventing a discharge of urine, but when in the kidney they prevent the urine from flowing into the bladder. The stone frequently lodges

in the ureter, in its passage from the Kidney to the bladder, occasioning a great accumulation of urine in the ureter, & distention of the ureter above the lodgement of the ~~urine~~ stone till the column of urine and the distention be so great as to force it down into the bladder.

This causes a good deal of pain, but when it is washed down the ureter into the bladder, the patient is much easier. The stone is sometimes lodged between the coats of the bladder, producing great pain; the itchings are violent. When the patient complains of burning and pain in the bladder, we have then reason to believe the stone has found its way into it. The patient should drink plentifully of barley water and endeavour to pass the stone by urine. He should attempt this repeatedly, if it does not succeed the pain becomes greater. The pain is worse after the patient has voided urine. When a stone exists in the bladder, the patient feels an itching sensation at the glans penis, accompanied with pain and heat in the bladder, at the place where the stone is lodged. The stream of urine is suddenly ~~stopped~~ sometimes at times, occasioning great pain, by the falling of the stone on the orrifice of the urethra, and at other times it flows in a full stream. An uneasy sensation is felt all along the urethra between the perin-

inum

and glans penis, as tho' something was lodged in the passage, occasioning the patient to squeeze and pull it, — causeing thereby an elongation of the penis and prepuce both. Sometimes it is attended with tenesmus and prolapsus ani. The urine is pale and often mixed with blood. The digestions is interrupted occasioning flatulency costiveness, weakness and fever, and if the stone is not soon taken out death soon takes place. Tho there are the generally attending symptoms of stone in the bladder they do not prove it unequivocally, as they sometimes occur from other causes, as inflammation or ulceration of the neck of the bladder; or ulcers or tumors in the scrotum. A case of a young woman came under my care with the symptoms above described, who was sounded three times, but without finding any stone; after which mercury was prescribed and in about 2 weeks the patient got well. In this case I suppose there was an ulcer at the neck of the bladder. Hemorrhoidal tumors, not unfrequently cause the symptoms. Sometimes the stone is incysted, and then the patient experiences no pain, because when he moves about the stone is prevented from falling on the neck of the bladder. When the patient discharges small pieces of matter, we may expect the

existence of stone. Mostly the stone can be felt by the sounding, which is the surest way of determining its existence. For this purpose we use an instrument of iron called a sound. Tho' the attempts of the surgeon to feel the stone may sometimes be frustrated by its situation behind, and below the neck of the bladder; but if the surgeon introduce his finger into the rectum, and press that part of the bladder up, he will be immediately able to feel the stone.

Many different remedies have been employed for the cure of the stone, but they generally do no good. Different substances have been taken into the stomach for that purpose; and others have been injected into the bladder as a solvent for it, but all of no use. Strong alkaline solutions are found to dissolve stone out of the body, and hence have been advised for the cure of stone. The most usual substances taken into the body are, aqua nephritica, alkalina, aqua calcis, uva ursi &c. Medicines have likewise been advised to be injected into the bladder to dissolve the stone. Our great objections to medicines used as solvents, is, that they may occasion the coats of the bladder to slough off, and thereby endanger the life of the patient.

The carbonate of potash has been serviceable in some cases. Lime water is useful sometimes to ease the pain. Uva ursi has likewise been given for that purpose. Blood-letting and opiates are the best remedy for a fit of the stone, as to warm bathing. When these substances that are employed fail, the operation of lythotomy becomes necessary for the existance of the patient. Before proceeding to the operation in cold weather, we should dip the sound in warm water to prevent contraction of the part.

The patient should be laid on a table or some convenient place, and the surgeon proceed to introduce the sound (after oiling it) with the concave part turned towards the bladder. If it is not easily introduced in this manner, turn the convex side to the bladder and try again. Frequently the sound will pass till it comes to the membranous part of the urethra and then suddenly stops. No force should be used to gain an entrance, lest the sound be forced out of the urethra into the soft parts. To avoid the fold in the urethra that stops the sound, the instrument is to be turned round with its concave side up, in such a manner, that it shall revolve exactly on its axis. Some Surgeons turn the concave side of the-

X The Glyster should be composed of one or two tea spoons full [according to the age of the patient] of Laudanum and a quantity of Barly water

sound to the bladder and persist in that particular way for its introduction, whilst others as tenaciously pursue the opposite way. This arises altogether from prejudice, because they have been used to do it always in that way. The way in which the silver catheter is introduced, is so similar to the introduction of the sound, that I shall not take up any more of your time in describing the mode of introducing the former to the latter — When the sound is introduced into the bladder, turn it in all directions; if you do not feel the stone pass it up further in the bladder; if it is not yet felt, cause the patient to change his situation: frequently when the stone has eluded the sound, by placing the patient on his hands and knees it has been directly felt. When its existance is fairly ascertained, the operation may be performed. About two weeks before the operation the patient should attend to his diet and live low, and a day before the operation should take a dose of castor oil to open his bowels; about an hour before the operation a glister should be administered. Some surgeons advise to ~~evacuate~~ empty the bladder before the operation; but I should advise to let it be moderately distended with urine which will render the operation easy.

The instruments necessary for the operation, are first, a table of about the ordinary height; I generally use a common

dining table; whatever table is used, it should be narrow, so that the apistants can have an opportunity of holding without bending over it, which would tire and prevent them from holding steadily: a blanket or something of the kind is to be spread over the table and pillows applied to support the patients head. It will be necessary to be provided with warm water, and likewise some sweet oil, also ligatures, and tenaculum, for taking up any arteries that may be cut. Ligatures must be provided to tie the hands to the feet to prevent the patient kicking; these answer very well of worsted binding. With a grooved director, a scalpel, a sharp pointed bistouri, a gorget to divide the sides of the neck of the bladder. The point of the gorget should be so as to play easily (which is of great consequence). In the groove of the staff, which is to be very clear of blood or mucuous matter, and very smooth and clean. Forceps, these are of different shapes and sizes. I would prefer the smaller ones, to those that have large ends for grasping the stone. If the small forceps are not strong enough for extracting the stone, a common scoop, such as Accoucheurs use for extracting the childs head may be introduced by the side of them, and a assist in drawing out the stone. Sometimes the stone is not sufficiently strong to bear the extraction, but breaks in pieces, then the small

x Barly Water is preferable to simple water

x I advise and use a gorget with but one edge

forceps are much best. If any pieces are broken off, it may readily be seen by examining the part extracted. A syringe has been found of service to clear the bladder of small pieces of stone, by introducing it thro' the wound, and injecting warm water into the bladder, which will wash away every small piece that remains. It is necessary for the edge of the gorget to be very sharp at the beak, else some force must be used to penetrate the bladder, by which the gorget may go too far and wound the fundus of the bladder. An accident of this kind actually happened to with Bloomfield. The reason why this part of the instrument is mostly dull, is because the cutler cannot get at it to sharpen it on account of the back: to remedy this inconvenience, I have got some made so that the sides can be taken off, leaving the beak only behind; when taken off in this manner they can be sharpened at the point as easily as at any other part. The sides are fastened on by means of a screw. The old form of the gorget used to be but one edged. i. e. having one edge for cutting and the other blunt; but they are now used with two cutting edges, so that both sides of the neck of the bladder may be divided: the edges used also to run from the beak in a curved or circular manner; but I prefer them —

№ 9. 1.92.

straight, forming an accute angle.

I shall now shew the mode of operating. After the director is introduced, the patient is desired to take hold of the outside of his heel, when the Surgeon passes the ligatures, which were previously fastened to the wrists, round the feet, each hand to its respective foot on each side. Two assistants stand by the side of the table, and each takes one knee of the patient in his axilla, and grasps the foot with his hands. Another assistant takes hold of the handle of the director and draws it to the right side. The surgeon then holds away the scrotum from the peritoneum, in which he makes an incision from above downwards, between the anus and ischium on the left side. Having cut thro the skin and cellular substance feel for the staff. Then take a sharp pointed bistouri, placing your fingers at the sphincter ani, to prevent your cutting it, and cut towards your finger till you find the groove. Then with the bistouri, rest the ~~back~~ back on your finger, and put the point in the groove of the staff laying it bare; the Surgeon then places the beak of the gorget in the groove of the staff, taking hold of the handle of the staff with his left hand, and bringing it to a right angle with his body.

An assistant then takes hold of the scrotum and draws

+ The staff should be continued in the bladder till the Surgeon has grasped the stone with the forceps after which it is to be removed —

it up. The Surgeon then bears down the handle of the gorget & pushes it into the bladder. The urine that is in the bladder now escapes. When the gorget has got into the bladder, the stopp is to be withdrawn; before the gorget is withdrawn — introduce the forceps, then take away the gorget, drawing it carefully so as not to make a new incision. —

The handle of the forceps should be turned upwards, as gravity would cause the stone to fall to the lower part of the bladder. The forceps should never be held in one hand, but one handle in each hand: When you have got hold of the stone introduce the finger by the side of the forceps to loosen it in any part that may be entangled, and to place the stone in the best and easiest way for its escape from the bladder. When the stone is extracted, examine if any more be left in the bladder, or if any pieces are broken off the stone taken out If any vessels be cut, use the common means for securing them. The patient is now untied, his knees put close together, and laid on his left side in bed. —

Not unfrequently as you are about to push in children, they are seized with a straining fit. The diaphragm and abdominal muscles press the viscera of the abdomen on the fundus of the bladder, and force it on the neck of the bladder, if you push in the gorget during this straining, you will

very certainly cut the fundus of the bladder. If it comeon after you have divided the neck, and the urine evacuated, it will be safest to withdraw the gorget.

The operations of Lythotomy is much simpler in females. Some have advised to introduce the staff into the bladder, and then with a bistouri make an opening into it from the vagina, and extract the stone from the bladder thro, the vagina. Sometimes this mode of operating answers very well. I myself have performed the operation in this manner, and the wound healed very well.

I however, prefer the gorget.

Lecture 23d

Amputations.

I told you when treating of wounds, the when the parts were so injured that they could not recover, amputation became necessary. If this is deferred till after inflammation has supervened, we must then wait till it has subsided. Amputations likewise become necessary from tumors, as white swellings of the joints. Diseases of the joints often produce hectic fever, and the patient becomes much debilitated by night sweats, loss of appetite &c, and amputation is necessary for his restoration. If the patients stomach be good never fear to operate tho' he be much emaciated

The antient Surgeons advised amputation where mortification had taken place, and whilst it was still progressing. This practice should always be avoided, because if the limb be taken off in the progressive state of mortification, the stump will be attacked, and the patient obliged to another operation; but if the surgeon waith till the mortification has stopped, and the dead part seperated, the bone only will remain to be cut which will give but little pain to the patient.

Another cause of amputation is large tumors causing the absorption of bones or joints, also fungus hæmatodes

I shall now mention the manner of operating. Sometimes we have to amputate the fingers: if the disease is at or near the ends of the fingers, it will answer very well to take it off at the first or second joint, so that a portion of skin may be left to cover the end of the bone; this draw the edges of the skin and to be brot. in contact, and kept in this situation by adhesive plaster, and secured by a roller, which, as the arteries are so small, will be sufficient to prevent any hemorrhage. Sometimes the finger has to be taken off at its articulation with the metacarpal bones; all that is necessary then, is to cut down between the fingers till you come to the joint, then after the finger is taken off, and the vessels secured, bring the edges of the skin together, and apply adhesive plaster. A roller is then to be passed round the hand. Sometimes we have to take the metacarpal bone away. This may be done either at its articulation with the carpus, or sawed off at any place where it is necessary with a metacarpal saw — first separating it from the other parts by making an incision directly over the ~~bone~~ middle of the bone, from the fingers down to the place where

you would take it off — If any vessels are cut take them up with a tenaculum. Bring the ends together and secure with adhesive plaster, and apply a bandage round the limb.

Amputation of the Leg.

And first of the things necessary to perform the operation. a compress bandage, a tourniquet, — These are to be applied if the leg is amputated, just above the knee but if the thigh is taken off, they are to be applied just ~~above the knee~~ near the groin. — A straight Knife, this should be very sharp else it will only mangle some parts and cut others; for if it is dull, the skin will be thrown in folds before it, and the surface of the divided edge will be very uneven and ragged. A scalpel will be wanted, — A cattin, this is a knife with two cutting edges — A retractor, this is a piece of leather with three tails, the middle piece is passed thro between the tibia and fibula to hold back the soft parts while the bone is taken off — A saw, for cutting off the bone. It is necessary that the saw be not wide, else by binding on the kerf it will be apt to break off the bone before it is cut thro', leaving portions to be broken off with the nippers — A pair of nippers to break off any spiculae that may remain — A tenaculum.

Besides these it is necessary to have some warm water, Sponges, needles, ligatures, lint, adhesive plaster, cerate, tow, and two bandages of linnen called long ets. —

In proceeding to the operation, the patient must be laid on the table covered with a blanket or form matress; the compress is first laid over the artery, and the tornequet applied on it to stop the circulation — about an hour before the operation, the patient should take a dose of laudanum, not so much for easing the pain as to give him fortitude, and fit him to undergo the operation, because some patients cannot stand it. I have seen one patient faint three times under the same operation. Screw the tornequet till the circulation is stopped. In order to ascertain when this is effected, I commonly apply my finger on the anterior tibial artery, while the assistant screws the ~~artery~~ tornequet, by which I can tell as soon as it is stopped. When the injury is low down near the foot, the Surgeon has his choice — where to operate. If it is a person of high life who — wants to have the appearance of two legs, and go in company, and who can afford to get an artificial leg, it may do to operate as far below the knee as convenient; but if it is a poor man who has to undergo hardships, he

can but ill afford ~~one~~ an artificial leg, and should have the operation performed just below the knee - He can then ~~can lie upright on his stump~~ bend his knee and bear his weight on the part naturally formed without much inconvenience from the projecting stump, which would be greatly in the way were the leg taken off at the ~~stump~~ ankle -

This inconvenience arising from a stump projecting so far behind, is so great, that a person subjected to it undergoes a second operation to get rid of it -

In proceeding to operate, let an assistant draw up the skin first, then take a straight knife and make an incision round the leg. It is not necessary that this should be all at one stroke, as some surgeons advise I have seen the Surgeon place himself in such a posture to make the incision round at one stroke, that I was really afraid he would cut a piece of his own nose off - which might have been done by the least slip, as the floor was sanded to catch the blood - Some surgeons advise to make the incision straight thro' to the bone; but I would advise to make it obliquely, so that the flesh on the back part of the leg may be brot in contact with the skin on the fore part, and completely cover the end of the bone. After you have cut round thro'

the skin and cellular membrane, dessect the integument from the muscles and turn them back; if this cannot be done they must be drawn back; and then divide the muscles down to the bone. This done take the catline and divide the interosseous ligament and muscles, and pass the middle strip of the retractor between the bones to draw back the soft parts. Then saw off the bones. Some advise to hold the saw so as to cut both bones at once; this is often inconvenient. I usually saw the fibula first and then the tibia. It is necessary to make long strokes with the saw, else the kerf gets clogged. After the leg is off wash the surface with warm water, and then search for the principle arteries, which must be drawn out with the tenaculum and secured by ligature. After all the arteries that can be seen are taken up, the tourniquet should be loosened to see if any of the flesh arteries bleed. warm water should be poured on the part, & the patient should have a little wine and water to drink, to excite the circulation, and expose all the bleeding arteries. When they are all secured, wash away the whole of the clots of blood and draw down the integument over the end of the bone, and wrap a bandage round the stump, to prevent the contraction

of the nerves - Secure the edges of the wound in contact by means of adhesive plaster. Before these are applied the ligatures are to be brot out at the corner of the wound - a piece of lint spread with cerate is to be applied between the edges to prevent their union by the first intention, for if they unite before the ligatures come away, they will prevent the same from being thrown out, and an abscess will be formed causing great pain to the patient - After the adhesive plaster ~~spread~~ apply lint spread with simple cerate, then the pledget of tow, then the longets in a crucial form, and secure them by a roller. The tourniquet should be left on, tho loose, after the leg is dressed to be in readiness if hemorrhage should occur. The patient is now put to bed with the stump rested on a soft pillow ——— I now shew the mode of the

Amputation of the Thigh.

The instruments are much the same only the catlin is not wanted, nor need the retractor be slit in two places but only in the middle. This operation is to be made as low down as possible, but so that none of the diseased parts are cut. After making an incision thro the ~~integuments~~, skin, dissect the integuments as in the other case, and divide the muscles down to the bone. This done

apply the retractor and saw the bone - After washing it take up all the large arteries and large veins. In old people the arteries are sometimes ossified; I then pass a needle round some portion of the muscles, including them in the ligature, the better to prevent hemorrhage - All the other processes are like what I have described in the leg.

Bronchotomy.

Sometimes a swelling or obstruction of the aspera arteria takes place to such a degree that an operation becomes necessary.

This operation is performed between the thyroid and cricoid cartileges. First make a longitudinal incision down to the cartileges; and then puncture the trachea with the point of a knife, and introduce a silver cannula, which is to be secured in its situation by means of tape passed thro' the holes in the ears of the cannula, and round the neck of the patient. This is a very easy and safe operation no vessels run in the way to cause hemorrhage.

Ascites.

This is a collection of water in the cavity of the abdomen, for which it is necessary to perform an operation called paracentesis. The operation is generally performed at the left side about half way between the superior anterior spinous process, and the navel — The left side is preferred for the purpose of avoiding the liver. The celebrated Mr Cline in performing this operation wounded the epigastric artery, and the patient was suffered to die from hemorrhage. I say suffered because he ought to have cut down to the bleeding vessel and secured it. This made him suspicious of — operating in the side. He therefore proposed to make an incision about half way between the pubis and navel. Notwithstanding the tendinous part that is perforated, however contrary it may seem to theory, heals up as well as any other part. The urine should always first be evacuated. This operation is generally performed with a trocar, the stilette of which some surgeons have made flat. This must be very inconvenient, and require a great deal of force to push the cannula into the belly. Others have the stilette —

triangular. It is of the greatest consequence to ascertain whether the tumor be really a collection of water or not; if it contain water it may generally be told by the fluctuation An actress who had been several times tapped for ascites, believed herself afflicted with a return of the complaint, and applied to a surgeon for relief. He without examining sufficiently, plunged in the trocar in the same place where it had been formerly, but to his great astonishment no water followed. In about three days she died, and examination traced the wound into the uterus, and lodged in the lips of the foetus. I generally perform this with a common lancet, which answers very well; and instead of a trocar introduce a large female catheter, the rounded end of which will be more easy and less liable to be stopped by the intestines coming in contact with the orrifices which are in the sides of the catheter, but in the end of the cannula, and will allow the water to flow out without interruption. The patient sometimes, while the water is flowing, or just after it is evacuated, faints. He should have some wine and water given him, and a degree of pressure made on the abdomen, to keep up some of the pressure that existed before, from the distention.

After the water is all evacuated, withdraw the [illegible]

the catheter, and bring the edges of the wound in contact together by adhesive plaster, and apply a compress to the orrifice; this done, pass a roller round the belly for its support.

Sometimes the fluid containd in the abdomen is of a gelatinous consistance so that when puncture is made no fluid flows — I saw a case of this kind in the Pennsylvania Hospital — I was aware that this was the state of the fluid when I found that no discharge did take plce upon withdrawing the pilot The patient died in a few days and upon examining the patient I found that I was not mistaken It is well to ware of this and mention to the patient and his friends the possibility of its occurrence so as not to subject yourselves to censure

Lecture 24th

Aneurism —

An aneurism is a morbid dilatation of the heart, or of some part of the arterial system. —

Aneurisms are divided into true and false. The true are such as are already described, and are attended with no wound or division of the cutis — The false, are such as occur from accident, independent of any disease of the artery — I shall confine myself principally to true aneurisms — There is a greater tendency to aneurism in one part than in another. — They may occur in the aorta and in different parts of the body at the same time, but are mostly confined to one part of the arterial system only, which yielding to the momentum of the blood, grows weaker and weaker, and at last bursts. —

The proximate cause of aneurism is a disproportion between the momentum of the blood, and the power of the artery. Of the remote causes of aneurism, we know but little — Excessive drinking of strong ardent liquors, is said to be one cause. It is said by some that violent strains ~~ing~~ lay the foundation for aneurism. I have twice seen

false aneurism in the ham from contusion. It has likewise been said that aneurism has sometimes been occasioned by bleeding, in consequence of the lancet passing thro the vein, and dividing or injuring the outer coats of the artery, leaving it too weak to resist the force of the heart. To ascertain this, Wm. Hunter tied bear the carotid artery of a dog he then dessected away the coats of the artery, one after another till he came to the internal polished coat of the wound was then tied up, and the dog left to himself: about three weeks after this, the dog was killed, the artery was examined and found to be of the natural size, - not having dilated in any wise; and the coats were consolidated to the sides of the artery and got well. The circumstance which lays the foundation for aneurism, is, a diseased state of the artery, which renders it too weak to resist the impetus of the heart. An aneurism is not simply a dilatation of the artery, but there is likewise a roughening of the internal coat, which at times becomes ossified — Aneurisms occur less frequently, it is said, in women than in men. I have, however seen several cases of aneurism in women. They occur most frequently in young people. It is of the greatest consequence to distinguish between aneurisms and tumors of any

other kind; tho' the difference is obscure, and often not to be perceived, especially in old aneurisms. In recent aneurism the pulsation can always be felt by pressure; but after some time when the swelling and tenseness are much increased, putting the parts on the stretch, and the coagula is formed, the pulse becomes obstructed, because the ~~heart~~ stroke of the heart has to be continued thro' the coagula to the finger touching. In all recent cases we can remove the blood contained in the swelling, by pressure made for sometime over the part; tho' it will soon return when the pressure is taken off. whereas a tumor remains immoveable ~~in cases of long standing~~. A tumor may form on an artery, or be so situated as to partake of the pulsations, and in that respect resemble an aneurism but we can place the fingers behind it so as to pull it up off the artery, and the pulsation ceases. Even when we cannot raise the tumor from off the artery, we are still enabled to distinguish it from an aneurism, by the particular pulsation, for when a tumor is situated on an artery, we are sensible of the whole body moving. When the dilatation takes place in the thorax, it is known by a palpitation of the heart, and difficulty of breathing. When the dilatation of an

artery has commenced, the progress is much slower than we would suppose, because the impetus of the blood, as the artery dilates, is divided over a larger surface. It does not advance all at once, but increases gradually, coagula forming as the sac distends. The aneurismal bag, as it enlarges, contracts adhesions to the parts around it, and the internal parts wear away to a great size. The dilatation of the artery commonly takes place on that side which is most remote from the heart, or on that on which the impetus of the heart is the greatest, tho' sometimes they are equally dilated. The pressure they occasion frequently causes the absorption of the coagula, or of perhaps, a portion of the surrounding parts. I have seen a portion of the ribs absorbed by it. In this manner it goes on till it arrives at the skin, when it bursts, and the patient dies by a sudden gush of blood. In an aneurismal sack there will be formed a number of coagula, or lamina. The general indication in the treatment of aneurism is, to lessen the quantity of blood in the trunks of the arteries - Rest and low diet are also necessary. Bandages have been likewise applied, and are said to have performed cures. I shall speak chiefly of popliteal aneurism. At first there is no pain, but only a pulsating

tumor, which enlarges till it produces pain from putting the large nerves on the stretch. The surest method of curing aneurism is, to tie up the artery. The mode of performing this operation some years ago was to make an incision into the aneurismal sac, while the tourniquet was screwed tight on the upper part of the ~~sac~~ thigh; and after discharging the blood to tie up the artery just above the sac. But this is frequently unsafe on account of the diseased state of the artery, which would be likely to burst at the place where it was tied —

To remedy this Mr. Hunter proposed to take up the artery about half way between the knee, and anterior spinous process of the ileum, also that he might avoid the hemorrhage which frequently occurred from the diseased and ossified state of the artery, which would not allow the sides of to unite. The limb will be nourished by the anastomosing branches. It however, sometimes happens that they are not sufficient for the support of the limb, and mortification ensues. This I suppose is not owing to any want of sufficiency in the size or number of the anastomosing branches, but to the tenseness or pressure of the swelling, obstructing the ~~perspiration~~ circulation. I saw one case of this kind, but I suppose that was owing to the tumor preventing the circulation in the anastomosing branches

In proceeding to perform this operation; first have a tourniquet fixed on the upper part of the thigh; but not tight, allowing the artery to pulsate; then making the incision about four inches in length, longitudinally in the course of the fibers down to the sartorious muscle, and dissect along the lower edge of it. It is necessary to pay particular attention to this for if you get above the sartorius muscle you may cut down to the bone and not find the artery. After you have dissected thro' the skin and cellular substance, feel with your finger for the pulsation of the artery. It is best to use the handle of the knife to expose the artery, as there is great number of anastomosing branches which would probably be wounded by the sharp edge of the scalpel. There is a thin fascia before you come to the artery, thro' which you must scratch ~~before you come to the artery~~ with the point of the knife, a little to one side of the artery, to avoid wounding it. After the artery is brot into view, it may be taken up either by means of a silver bodkin, or as Mr Abernethy advises, by passing a couple of ligatures round it at about half an inch distant from each other, and then separate the artery between the ligatures by which means he says, the ligatures come away sooner. The artery is divided to take off the tension. I have seen the ends recede 3/4 of an inch from each other when divided.

In whichever way it is performed, the ends of the ligatures are to be brot outside of the wound, and a pledget of lint placed so as to prop the bottom of the wound, & close together, that the outside of it may not heal too soon, and thereby form an abscess. I have seen an abscess from this cause extend from the knee to the anterior spinous process of the ileum. The aneurismal tumor after this treatment most frequently disappears. This is sometimes, however, not the case, and the tumor goes on to suppuration. If the tumor, after it has suppurated, does not open of itself, by an ulcerative process, it should be opened by an incision: When this is neglected, very serious consequences, sometimes occur. I once knew it to produce an abscess of the knee joint, and the patient ~~patient~~ died — When the artery bursts and allows the blood to flow in the cellular texture, the pulsation may be perceived at first; but the blood stagnating there, soon coagulates, and the swelling and tension prevent any pulsation being felt, and then it is impossible to say whether it be an abscess or an aneurism. ——

When this occurs we should apply a tourniquet and make an ~~incision~~ puncture into it; if it be an abscess, the matter will be allowed to flow out; if it be an aneurism it must be tied up. When the tension is great, part of the coagula should be scooped out at the puncture, to relieve the tension. In 8,

or 10 days the tumor will have suppurated, and the extravasated blood will have come away

False Aneurism

There are two kinds of the occurring from wounds in the artery. One occurs from bleeding in consequence of the lancet puncturing thro' the vein into the cavity of the artery, and letting the blood flow from the artery into the vein; this forms what is called varicose aneurism. It may be told by a thrilling sensation which is easily distinguishable. A hissing noise may be heard by applying the ear near to the orrifice. Sometimes the two orrifices do not exactly correspond with each other, and the blood instead of flowing into the vein, escapes into the cellular membrane, and forms a tense aneurismal pouch, communicating with both the artery and vein, causing great pain to the patient, and if an operation is not performed, the skin becomes tense and bursts, or sloughs away, bleeding profusely, and exposing the patient to great danger.

The varicose aneurism is free from danger, and therefore no operation should be performed. The only inconvenience arising from it is, a little deformity, caused by the dilatation of the vein at the place. But when

the blood escapes into the cellular substance, an operation be-
comes necessary. The artery and vein should both be secured
above and below the sac.

The varicose aneurisms do not require an operative
in general, yet some of their modifications do.

Lecture 25th

Fistula in Ano.

This disease is a ~~cancer~~ cavernous ulcer situated in the vicinity of the anus. It frequently consists of one two or more cells, and is caused by inflammation. If the parts are great=ly inflamed, and violent tumefaction take place, it produces disury & bearing down pains, and not unfrequently occasions suppression of urine. When it arises to so great a height, it generally terminates in suppuration, forming an abscess, and making an opening either externally, or into the rectum. or both. If it communicate externally only, it is called incomplete fistula. If it communicate both external=ly and internally, it is called complete. but if it communicate with the rectum only, it is called blind or occult fistula. To examine well the state of the parts the patient should lean over a table, and the Surgeon having his finger well oiled, should introduce it into the rectum, and insert a probe into the abscess; if he can feel the point of the probe, the fistula is complete; but if it be incomplete he will be unable to feel the probe Sometimes the abscess is small, resembling a bile & is

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No. 11. F. 2.

easily cured. Sometimes the side of the rectum is separated and detached from the ~~rectum~~ buttocks, to a very great extent rising even to the brim of the pelvis.

The causes that occasion these ~~inflammations~~ abscesses are such as occasion inflammation in any other part of the body. We should examine very carefully in all cases of pain in the region of the anus to discover whether it originate from piles; if not, so that remedies should be used to prevent suppuration. When we are consulted by a patient concerning pain situated in the region of the anus, we should, however disagreeable it be to the patient or ourselves, always examine into the real nature of the complaint. When inflammation and swelling are found our first endeavour should be to prevent suppuration; blood should be drawn according to the nature of the case, and the constitution of the patient, purging, leeching, bread and milk poultices &c. These remedies are in general sufficient to remove strangury, when not, the warm bath should be tried.

Sometimes these remedies fail, and the tumor increases to such a size, as to occasion a total suppression of urine; a catheter should then be introduced for the relief of the patient, which may be left in a considerable length of time without

any bad consequences resulting from it. The catheter should be made of gum elastic, which can adapt itself to the shape of the part, and will be worn with much more ease than a silver one. Sometimes inflamation comes on in the buttock — with disposition to gangrene. On this subject I would — advise you to read Pott. Tho' I would advise you, from the success I have had in the use of blisters in such cases, to apply them in similar circumstances. If the surgeon is called in early, he may generally resolve the inflammation; but unfortunately we seldom see these cases till suppuration has taken place, when an operation is necessary for the cure.

In all cases where there is a collection of matter, we should make an opening in the most prominent part, and not wait for it to open naturally. In all cases we should enjoin the antiphlogistic regimen till inflammation subsides — I shall proceed to mention the circumstances which render it difficult to perform a cure without a surgical operation

First, where the fistula is complete, the formation of pus keeps its sides distended and prevents its healing; and next in addition to this, the ulceration of its sides prevents its healing. If the orrifice is small, so that the matter cannot readily flow out, it collects in the cavity and the granulations cannot come in contact

2d. The suppurating cavity is prevented from healing by the external orrifice closing too soon; and here the patient thinks himself getting well, but his hopes are soon disappointed, for the matter has either to force its way out again, or to make a new opening.

3d. When the fistula is complete faeces pass into the opening and are pressed out at the external orrifice when we go to stool. When occult the matter makes its way into the rectum and will be discharged in that way; but it will frequently be obstructed by the faeces, tho' in most cases the opening goes obliquely downwards, and when the patient goes to stool, the faeces will close up the orifice: But I have seen cases where the orifice opened upwards into the rectum, and whenever faeces were voided would get into the abscess and distend it very much, causing great distress to the patient.

4th. When nature is unequal to a cure without the assistance of a surgeon — As 1st. Where the cavity is on one side of the sphincter, and the patient goes to stool, the contraction of the vessels will draw the detached side from its natural situation destroying all the newly formed granulations, and preventing its cure. 2d. another obstruction to the cure is where the patient goes to stool, the gut is somewhat protruded, and

any adhesions that may have taken place in the contracted state are destroyed. It is to this cause that the small portion of blood is oozing, which appears after stool.

5th When, owing to some cause or other, the healing of the fistula has been prevented for sometime, the parts become callous, as was before explained, and such callosity happens

6th The practice of introducing substances into the abscess, as stopping it full of lint, called by some Surgeons "dressing to the bottom".

7th. When the extent of the fistula is carried a considerable way into the pelvis, and even to the upper part of the brim, accompanied with caries, nature seldom effects a cure, and even the art of the best Surgeon is often foiled.

8th The general health of the patient; this should be attended to, as it will assist greatly in the cure.

The Operation for Fistula in Ano.

This consists in dividing the Sphincter and detached gut: because, 1st being cut prevents its acting so as to injure the granulations, and 2d the faeces can pass readily regularly out without protruding the rectum.

For information of the particular manner of performing this operation, I would advise you to read Pott. My object has been to shew the principles on which the healing is effected.

altho' I shall make some remarks on the mode of operating.
When the fistula is complete, the patient is to lean over a table
then the Surgeon after oiling his finger, is to introduce it
into the anus; then introduce a bistouri thro' the fistulous
cavity, till it comes in contact with the finger; draw away
both finger and bistouri together, and the bistouri divides —
all the parts between the upper opening (at which it was
inserted into the rectum) and the external end of the rectum.
It divides the sphincter and rectum from its upper commu-
-nication to its extremety — In the introduction of the
bistoury, the patient will feel considerable pain from the edge
of the instrument cutting as it is inserted. To remedy this
I have a silver cap that goes on the point of the bistouri, &
extends along one side to the handle, being a little wider than
the blade, which secures the ~~handle~~ edge. When the bistouri
is introduced by pushing a little knob at the end of the cap,
it falls off, leaving the edge exposed. Another method when
a silver cap is not at hand, is to place a piece of waxed —
linnen on the edge; this should be long enough to reach to the
end of the handle, so that when the bistouri is introduced
we can draw away the linnen and divide the parts.
This mode answers extremely well. Sometimes the opening
into the rectum is so low down, that we can pass a director

from the abscess into the rectum & out at the anus; in this case the parts may be divided by a scalpel. But when the fistula is so high up, that to divide the parts with a bistoury might endanger a hemorrhage, we should pass a ligature thro it bring it out at the anus and tie it, tho not so tight as to occasion great pain. This will avoid hemorrhage & the part within the ligature will be divided by ulcerative absorption. The wound occasioned by the ligature will heal nearly as fast as the ulceration goes on, so that by the time the ligature has cut thro the wound will be nearly healed up. tho sometimes it does not heal so fast.

I shall now make a few remarks on the

Hare Lip.

Which derived its name from its resemblance to the lip of that animal. It mostly takes place in the upper lip, and is but one slit, tho sometimes the lip is divided in two places. These are most frequently born with us, tho they sometimes happen from accidents. When they occur at birth, the suture uniting the maxillary bones together, is at times, not well consolidated, owing to the want of the gentle pressure of the lip. In such cases the lip should be united immediately. In proceeding

to do this we should have a pair of sharp strong scissors — which are the most convenient, and cut a small piece off from each lip, taking care to cut out the upper angle or else the lip, however well united below, will not heal above. The piece cut out resembles somewhat the letter V After this is done, the edges are drawn equably together and secured with two silver pins by the twisted suture, always taking off the points of the pins after they are introduced to avoid hurting the patient. This is especially necessary in children. The pins should be left in about four days, when they may be withdrawn. This can be done by taking hold of the end with a pair of nippers, as the pins will hold pretty fast. Lay your finger on the thread when you draw the threads to prevent pulling it off — The thread may be left for one or two days longer, by which time it will be perfectly well. The thread will be agglutinated to the parts by the mucous of the nose.

Lecture 26th

Strictures in the Urethra

By this term, Stricture, is meant the diminution of any canal at a particular part. When they occur in the urethra, they most commonly happen at the bulb, tho they sometimes take place at the bulb middle of the urethra, and sometimes beyond the bulb at the membranous part of the urethra, tho' rarely. They are of two kinds, spasmodic and permanent, tho these two kinds are not unfrequently combined. The first effect of a stricture in the urethra, is to decrease, or lessen the flow of urine; and oftentimes the patient does not suspect any disease, until in the voiding of urine, he finds it to pass drop by drop — He will now have frequent trials to make water, passing a little at a time, and this not without considerable straining. A gleet in general attends it, owing to the straining and irritation there is in passing urine. The parts situated between the bladder and stricture, become very much dilated, and the other parts diminished, resembling in its effects a string tied round the penis —

x Mault liquors I have observed to bring on a stricture
where there existed a predisposition to it —
When a stricture has once been formed there almost
always exists a tendency to its renewal and I always
direct such patients to pass a Bougie at least once
a month — By this means the occurrence of stric-
ture is often times prevented —

The Stricture most commonly runs regularly round the urethra, but not always, for it is sometimes found at one side only —

Whenever spasms supervene in such a stricture the passage is completely closed.

The causes are cold weather, cold feet, and the intemperate use of strong drinks —

I had a patient in whom it was caused by exciting from too long retention of ——— The great difficulty there is in ascertaining the causes, is the reason that the suppression is generally not treated with success, for the stricture when not

venereal disease is sometimes the cause of it —

Treatment. The permanent stricture may be dilated in common by a bougie. Much depends upon the preparation of bougies, and upon their — make — In general use waxed linnen. Pieces of fine linnen cut to a point, and dipped in pure wax, and rolled smoothly up, make the best bougies: the point must be small, but the body sufficiently stiff to bear the force necessary for introducing it. The bougie

may be introduced as far as it will enter, and left for sometime with its point in contact with the Stricture, till the irritation has subsided; and then press it gently forward; by which means the Stricture will be frequently overcome.

Commonly when the bougie is introduced the patient will faint and a cold sweat will break out over him. This seldom happens after the third introduction of the bougie. When the stricture is small, it may then be dilated. At times cases occur, in which the strictured part is so close as not to admit the point of the bougie: in such cases We sometimes succeed by letting the patient pass a bougie down the Stricture, and press the point of it on the stricture, for the space of an hour or two every day. Sometimes the canal is thrown to one side making the passage irregular; When this occurs, the point of the bougie is to be bent to one side, and then introduced.

Sometimes the pressure and irritation of the urine accumulated in the parts, occasions ulceration of some of the parts behind the Stricture forming an artificial opening called fistula in perinea. In such cases there are two modes of relief, either by caustic, or by the lancet. Caustic was first used by Mr Hunter, and afterwards by Mr Home. I have used it myself, in

several cases with very good effect. The caustic is rolled up in the end of the bougie, and tied by a very fine thread: the end of the caustic may project a little. To prevent the caustic burning the canal before it gets to the stricture, a small cap of waxed linnen, secured to a fine thread, and fitted to the end of it, answers very well. When the bougie is passed down the stricture, the cap may be withdrawn by means of the thread.

When the Stricture is at the bulb of the urethra, or before it, it may be divided by a lancet defended by a silver canula. The distention of the urethra behind the stricture, makes it almost impossible to divide any other than the strictured part. When the canula is introduced to the stricture, the lancet may be pushed thro it and it divided but the circumstance of the curvature of the urethra, makes it difficult to divide it from the back, and the curved canula answers very well in some such cases.

When the Stricture is dilated, a bougie or catheter should be introduced and kept in for several days; when, if there be a fistula in perineo, it will heal up in a few days.

In Spasmodic Strictures to treat it by caustic is hurtful. The warm bath, or a small piece of tobacco, or the end of a bougie introduced, to be in contact with the Stricture

will frequently relieve; or, an anodyne glyster, venesection, liquid laudanum, or emetics have proved serviceable.

I shall now say a few words on

Cancerous Breast

And the mode of extracting it. When the tumors are formed in the breast, if they do not yield to the antiphlogistic treatment, with the use of mercury, it is best to extract them early. There are two methods of extracting them, first by caustic and second by the knife. The last method is the best, as we are able to distinguish better between the diseased and sound parts. This may be done by one incision made directly over the middle of the breast, if the integuments are sound, but if ulceration, or even induration of any part of the skin have taken place, it will be necessary to make two incisions, so that the indurated part may be embraced between them and removed — If the glands in the axilla are affected by the tumor, we must continue the incision in the course of the lymphatics, to the tumified gland or glands in the axilla, and remove the gland and indurated lymphatics with the tumor. It is often difficult to get at the glands from their close situation in the axilla; but the weight of the tumor, if it be —

large will draw them down, so that you will be enabled to get your finger above them to tie a ligature round which should always be done before they are separated, on account of the many vessels of that part.

When the tumor is taken out, the edges of the wound are to be brot in contact and secured by adhesive plaster that they may unite by the first intension.

Abscess of the Hip joint.

The first symptom or indication of the disease is, the child (it generally occurs in children about fourteen years of age) or patient refuses to walk or step. It is mostly attended with pain from the commencement; but this however does not always attend, and when it is a concomitant, it is often delusive, occuring not in the hip, but in the knee: this very frequently deceives the parents, and often the Physician is so deceived as to apply substances to the knee instead of applying them to the hip. Pain when it is attendant, is not always constant, but comes on at intervals, and continues for an hour or two and then ceases. It is often worse at night. After the disease has existed for some

time, a swelling and enlargement of the hip and adjacent soft parts to take place.

At this period touching or pressing of the part gives pain. If the patient stands up, he always rests on the sound side, bearing no weight on the diseased limb, but bends the knee of the diseased side forward, and the toes only rest on the floor. This disease of the hip joint is often mistaken for a disease of the spine. It may however be distinguished from caries of the spine, by laying the patient on his back on a table; for if only the hip be diseased, you can easily straighten and curve the spine.

Causes. It frequently comes on without any apparent cause; but often it occurs from blows on the hip and from jumping. After sometime, as the disease progresses, we frequently find the limb considerably shortened: this takes place in consequence of the bone being pushed out of the acetabulum by tumors forming in the socket, and the head of the bone is drawn upwards by the action of the muscles on the dorsum of the ilium. This circumstance of disease in the joints but ation by means of disease in the joint, has given rise to the term of "spontaneous luxation". In common the luxation is upward and backwards, but sometimes the

takes place downward and forwards, from the force of gravity and relaxation of the muscles. Sooner or later suppuration takes place, and the bone is found in a carious state; Suppuration does not however, always take place, for it has happened that a new acetabulum has been formed, which would allow of some motion to the limb. When suppuration has taken place, it is attended with more or less pain, and the matter which is formed, is discharged by one or more openings. In this state the patient very frequently loses his appetite, he becomes much emaciated, has night sweats, and hectic fever next ensues. In the progress of the disease the thigh dwindles away very much, becoming much smaller than natural. In some cases the shortening of the limb does not take place, for the head of the bone becomes diseased as well as the acetabulum, and forms an anchylosis with the socket. Sometimes the socket and head of the bone are wholly removed, and then if you examine, you can pass a probe thro into the pelvis.

Treatment. Unfortunately, we are not often called in in the forming state of the disease. I say unfortunately for if we were called in early, the disease might be sometimes counteracted. When called to a patient with those

symptoms, first bleed, & purge every other day, for two or three months - The best remedies for this purpose, I have found to be Jalap and cream of tartar; it should be given to produce four or five evacuations daily - You would suppose that children could not bear such a severe regimen, but experience proves that they can bear it very well. -

It is always necessary to prevent all motion - He should be put upon a vegetable diet, after this a warm bath may be used: I think it is more beneficial when impregnated with muriate of soda, or some neutral salt.

I have used salt brine one or twice a week - I have mentioned the turnefaction of the lips, first because it is from this circumstance, that the existance of the disease is ascertained - The application of caustics on the lips is frequently advised; both I have tried them in several cases, and have found them of no efficacy. The application of leeches to the part, are often of service. -

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